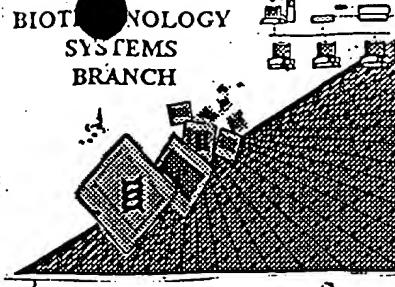


M / M

0300

RAW SEQUENCE LISTING ERROR REPORT



The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/988,384

Source: OIPE

Date Processed by STIC: 11/26/01

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.

PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax)

PATENTIN 3.0 e-mail help: patin3help@uspto.gov or phone 703-306-4119 (R. Wax)

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 3.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW:

Checker Version 3.0

The Checker Version 3.0 application is a state-of the-art Windows based software program employing a logical and intuitive user-interface to check whether a sequence listing is in compliance with format and content rules. Checker Version 3.0 works for sequence listings generated for the original version of 37 CFR §§1.821 – 1.825 effective October 1, 1990 (old rules) and the revised version (new rules) effective July 1, 1998 as well as World Intellectual Property Organization (WIPO) Standard ST.25.

Checker Version 3.0 replaces the previous DOS-based version of Checker, and is Y2K-compliant. Checker allows public users to check sequence listings in Computer Readable form (CRF) before submitting them to the United States Patent and Trademark Office (USPTO). Use of Checker prior to filing the sequence listing is expected to result in fewer errored sequence listings, thus saving time and money.

Checker Version 3.0 can be down loaded from the USPTO website at the following address:
<http://www.uspto.gov/web/offices/pac/checker>

Raw Sequence Listing Error Summary

ERROR DETECTED

SUGGESTED CORRECTION

SERIAL NUMBER: 09/988,384

ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHIA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE

- 1 Wrapped Nucleic
Wrapped Aminos The number/text at the end of each line "wrapped" down to the next line. This may occur if your file was retrieved in a word processor after creating it. Please adjust your right margin to .3; this will prevent "wrapping."
- 2 Invalid Line Length The rules require that a line not exceed 72 characters in length. This includes white spaces.
- 3 Misaligned Amino
Numbering The numbering under each 5th amino acid is misaligned. Do not use tab codes between numbers; use space characters, instead.
- 4 Non-ASCII The submitted file was not saved in ASCII(DOS) text, as required by the Sequence Rules. Please ensure your subsequent submission is saved in ASCII text.
- 5 Variable Length Sequence(s) _____ contain n's or Xaa's representing more than one residue. Per Sequence Rules, each n or Xaa can only represent a single residue. Please present the maximum number of each residue having variable length and indicate in the <220>-<223> section that some may be missing.
- 6 PatentIn 2.0
"bug" A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequences(s) _____. Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. This applies to the mandatory <220>-<223> sections for Artificial or Unknown sequences.
- 7 Skipped Sequences
(OLD RULES) Sequence(s) _____ missing. If intentional, please insert the following lines for each skipped sequence:
(2) INFORMATION FOR SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)
(i) SEQUENCE CHARACTERISTICS: (Do not insert any subheadings under this heading)
(xi) SEQUENCE DESCRIPTION:SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)
This sequence is intentionally skipped

Please also adjust the "(ii) NUMBER OF SEQUENCES." response to include the skipped sequences.
- 8 Skipped Sequences
(NEW RULES) Sequence(s) _____ missing. If intentional, please insert the following lines for each skipped sequence.
<210> sequence id number
<400> sequence id number
000
- 9 Use of n's or Xaa's
(NEW RULES) Use of n's and/or Xaa's have been detected in the Sequence Listing.
Per 1.823 of Sequence Rules, use of <220>-<223> is MANDATORY if n's or Xaa's are present.
In <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.
- 10 Invalid <213>
Response Per 1.823 of Sequence Rules, the only valid <213> responses are: Unknown, Artificial Sequence, or scientific name (Genus/species). <220>-<223> section is required when <213> response is Unknown or is Artificial Sequence
- 11 Use of <220> Sequence(s) _____ missing the <220> "Feature" and associated numeric identifiers and responses.
Use of <220> to <223> is MANDATORY if <213> "Organism" response is "Artificial Sequence" or "Unknown." Please explain source of genetic material in <220> to <223> section.
(See "Federal Register," 06/01/1998, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of Sequence Rules)
- 12 PatentIn 2.0
"bug" Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other manual means to copy file to floppy disk.

OIPE

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:27

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

Does Not Comply
Corrected Diskette Needed

4 <110> APPLICANT: Regents of the University of Minnesota, et al.
6 <120> TITLE OF INVENTION: DNA encoding methymycin and pikromycin
9 <130> FILE REFERENCE: 600.438W01
C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/988,384
C--> 11 <141> CURRENT FILING DATE: 2001-11-19
11 <150> PRIOR APPLICATION NUMBER: US 09/105,537
12 <151> PRIOR FILING DATE: 1998-06-26
14 <160> NUMBER OF SEQ ID NOS: 53
16 <170> SOFTWARE: FastSEQ for Windows Version 3.0

Errors on p. 27-

ERRORED SEQUENCES

2294 <210> SEQ ID NO: 6
2295 <211> LENGTH: 12199
2296 <212> TYPE: PRT
2297 <213> ORGANISM: Streptomyces venezuelae
2299 <400> SEQUENCE: 6
2300 Met Ala Phe Ser Pro Gln Gly Gly Arg His Glu Leu Gly Gln Asn Phe
2301 1 5 10 15
2302 Leu Val Asp Arg Ser Val Ile Asp Glu Ile Asp Gly Leu Val Ala Arg
2303 20 25 30
2304 Thr Lys Gly Pro Ile Leu Glu Ile Gly Pro Gly Asp Gly Ala Leu Thr
2305 35 40 45
2306 Leu Pro Leu Ser Arg His Gly Arg Pro Ile Thr Ala Val Glu Leu Asp
2307 50 55 60
2308 Gly Arg Arg Ala Gln Arg Leu Gly Ala Arg Thr Pro Gly His Val Thr
2309 65 70 75 80
2310 Val Val His His Asp Phe Leu Gln Tyr Pro Leu Pro Arg Asn Pro His
2311 85 90 95
2312 Val Val Val Gly Asn Val Pro Phe His Leu Thr Thr Ala Ile Met Arg
2313 100 105 110
2314 Arg Leu Leu Asp Ala Gln His Trp His Thr Ala Val Leu Leu Val Gln
2315 115 120 125
2316 Trp Glu Val Ala Arg Arg Ala Gly Val Gly Gly Ser Thr Leu Leu
2317 130 135 140
2318 Thr Ala Gly Trp Ala Pro Trp Tyr Glu Phe Asp Leu His Ser Arg Val
2319 145 150 155 160
2320 Pro Ala Arg Ala Phe Arg Pro Met Pro Gly Val Asp Gly Gly Val Leu
2321 165 170 175
2322 Ala Ile Arg Arg Arg Ser Ala Pro Leu Val Gly Gln Val Lys Thr Tyr
2323 180 185 190
2324 Gln Asp Phe Val Arg Gln Val Phe Thr Gly Lys Gly Asn Gly Leu Lys
2325 195 200 205
2326 Glu Ile Leu Arg Arg Thr Gly Arg Ile Ser Gln Arg Asp Leu Ala Thr
2327 210 215 220
2328 Trp Leu Arg Arg Asn Glu Ile Ser Pro His Ala Leu Pro Lys Asp Leu

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:28

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

| | | | | |
|------|---|-----|-----|-----|
| 2329 | 225 | 230 | 235 | 240 |
| 2330 | Lys Pro Gly Gln Trp Ala Ser Leu Trp Glu Leu Thr Gly Gly Thr Ala | | | |
| 2331 | 245 | 250 | 255 | |
| 2332 | Asp Gly Ser Phe Asp Gly Thr Ala Gly Gly Ala Ala Gly Ser His | | | |
| 2333 | 260 | 265 | 270 | |
| 2334 | Gly Ala Ala Arg Val Gly Ala Gly His Pro Gly Gly Arg Val Ser Ala | | | |
| 2335 | 275 | 280 | 285 | |
| 2336 | Ser Arg Arg Gly Val Pro Gln Ala Arg Arg Gly Arg Gly His Ala Val | | | |
| 2337 | 290 | 295 | 300 | |
| 2338 | Arg Ser Ser Thr Gly Thr Glu Pro Arg Trp Gly Arg Gly Arg Ala Glu | | | |
| 2339 | 305 | 310 | 315 | 320 |
| 2340 | Ser Ala Met Ala Met Arg Asp Ser Ile Pro Arg Arg Ala Asp Arg Asp | | | |
| 2341 | 325 | 330 | 335 | |
| 2342 | Thr Leu Arg Arg Glu Leu Gly Gln Asn Phe Leu Gln Asp Asp Arg Ala | | | |
| 2343 | 340 | 345 | 350 | |
| 2344 | Val Arg Asn Leu Val Thr His Val Glu Gly Asp Gly Arg Asn Val Leu | | | |
| 2345 | 355 | 360 | 365 | |
| 2346 | Glu Ile Gly Pro Gly Lys Gly Ala Ile Thr Glu Glu Leu Val Arg Ser | | | |
| 2347 | 370 | 375 | 380 | |
| 2348 | Phe Asp Thr Val Thr Val Val Glu Met Asp Pro His Trp Ala Ala His | | | |
| 2349 | 385 | 390 | 395 | 400 |
| 2350 | Val Arg Arg Lys Phe Glu Gly Glu Arg Val Thr Val Phe Gln Gly Asp | | | |
| 2351 | 405 | 410 | 415 | |
| 2352 | Phe Leu Asp Phe Arg Ile Pro Arg Asp Ile Asp Thr Val Val Gly Asn | | | |
| 2353 | 420 | 425 | 430 | |
| 2354 | Val Pro Phe Gly Ile Thr Thr Gln Ile Leu Arg Ser Leu Leu Glu Ser | | | |
| 2355 | 435 | 440 | 445 | |
| 2356 | Thr Asn Trp Gln Ser Ala Ala Leu Ile Val Gln Trp Glu Val Ala Arg | | | |
| 2357 | 450 | 455 | 460 | |
| 2358 | Lys Arg Ala Gly Arg Ser Gly Gly Ser Leu Leu Thr Thr Ser Trp Ala | | | |
| 2359 | 465 | 470 | 475 | 480 |
| 2360 | Pro Trp Tyr Glu Phe Ala Val His Asp Arg Val Arg Ala Ser Ser Phe | | | |
| 2361 | 485 | 490 | 495 | |
| 2362 | Arg Pro Met Pro Arg Val Asp Gly Gly Val Leu Thr Ile Arg Arg Arg | | | |
| 2363 | 500 | 505 | 510 | |
| 2364 | Pro Gln Pro Leu Leu Pro Glu Ser Ala Ser Arg Ala Phe Gln Asn Phe | | | |
| 2365 | 515 | 520 | 525 | |
| 2366 | Ala Glu Ala Val Phe Thr Gly Pro Gly Arg Gly Leu Ala Glu Ile Leu | | | |
| 2367 | 530 | 535 | 540 | |
| 2368 | Arg Arg His Ile Pro Lys Arg Thr Tyr Arg Ser Leu Ala Asp Arg His | | | |
| 2369 | 545 | 550 | 555 | 560 |
| 2370 | Gly Ile Pro Asp Gly Gly Leu Pro Lys Asp Leu Thr Leu Thr Gln Trp | | | |
| 2371 | 565 | 570 | 575 | |
| 2372 | Ile Ala Leu Phe Gln Ala Ser Gln Pro Ser Tyr Ala Pro Gly Ala Pro | | | |
| 2373 | 580 | 585 | 590 | |
| 2374 | Gly Thr Arg Met Pro Gly Gln Gly Gly Ala Gly Gly Arg Asp Tyr | | | |
| 2375 | 595 | 600 | 605 | |
| 2376 | Asp Ser Glu Thr Ser Arg Ala Ala Val Pro Gly Ser Arg Arg Tyr Gly | | | |
| 2377 | 610 | 615 | 620 | |

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:28

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

2378 Pro Thr Arg Gly Gly Glu Pro Cys Ala Pro Arg Ala Gln Val Arg Gln
 2379 625 630 635 640
 2380 Thr Lys Gly Arg Gln Gly Ala Arg Gly Ser Ser Tyr Gly Arg Arg Thr
 2381 645 650 655
 2382 Gly Arg Met Ser Ser Ala Gly Ile Thr Arg Thr Gly Ala Arg Thr Pro
 2383 660 665 670
 2384 Val Thr Gly Arg Gly Ala Ala Trp Asp Thr Gly Glu Val Arg Val
 2385 675 680 685
 2386 Arg Arg Gly Leu Pro Pro Ala Gly Pro Asp His Ala Glu His Ser Phe
 2387 690 695 700
 2388 Ser Arg Ala Pro Thr Gly Asp Val Arg Ala Glu Leu Ile Arg Gly Glu
 2389 705 710 715 720
 2390 Met Ser Thr Val Ser Lys Ser Glu Ser Glu Glu Phe Val Ser Val Ser
 2391 725 730 735
 2392 Asn Asp Ala Gly Ser Ala His Gly Thr Ala Glu Pro Val Ala Val Val
 2393 740 745 750
 2394 Gly Ile Ser Cys Arg Val Pro Gly Ala Arg Asp Pro Arg Glu Phe Trp
 2395 755 760 765
 2396 Glu Leu Leu Ala Ala Gly Gly Gln Ala Val Thr Asp Val Pro Ala Asp
 2397 770 775 780
 2398 Arg Trp Asn Ala Gly Asp Phe Tyr Asp Pro Asp Arg Ser Ala Pro Gly
 2399 785 790 795 800
 2400 Arg Ser Asn Ser Arg Trp Gly Gly Phe Ile Glu Asp Val Asp Arg Phe
 2401 805 810 815
 2402 Asp Ala Ala Phe Phe Gly Ile Ser Pro Arg Glu Ala Ala Glu Met Asp
 2403 820 825 830
 2404 Pro Gln Gln Arg Leu Ala Leu Glu Leu Gly Trp Glu Ala Leu Glu Arg
 2405 835 840 845
 2406 Ala Gly Ile Asp Pro Ser Ser Leu Thr Gly Thr Arg Thr Gly Val Phe
 2407 850 855 860
 2408 Ala Gly Ala Ile Trp Asp Asp Tyr Ala Thr Leu Lys His Arg Gln Gly
 2409 865 870 875 880
 2410 Gly Ala Ala Ile Thr Pro His Thr Val Thr Gly Leu His Arg Gly Ile
 2411 885 890 895
 2412 Ile Ala Asn Arg Leu Ser Tyr Thr Leu Gly Leu Arg Gly Pro Ser Met
 2413 900 905 910
 2414 Val Val Asp Ser Gly Gln Ser Ser Leu Val Ala Val His Leu Ala
 2415 915 920 925
 2416 Cys Glu Ser Leu Arg Arg Gly Glu Ser Glu Leu Ala Leu Ala Gly Gly
 2417 930 935 940
 2418 Val Ser Leu Asn Leu Val Pro Asp Ser Ile Ile Gly Ala Ser Lys Phe
 2419 945 950 955 960
 2420 Gly Gly Leu Ser Pro Asp Gly Arg Ala Tyr Thr Phe Asp Ala Arg Ala
 2421 965 970 975
 2422 Asn Gly Tyr Val Arg Gly Glu Gly Gly Phe Val Val Leu Lys Arg
 2423 980 985 990
 2424 Leu Ser Arg Ala Val Ala Asp Gly Asp Pro Val Leu Ala Val Ile Arg
 2425 995 1000 1005
 2426 Gly Ser Ala Val Asn Asn Gly Ala Ala Gln Gly Met Thr Thr Pro

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:28

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

| | | | |
|------|---|------|------|
| 2427 | 1010 | 1015 | 1020 |
| 2428 | Asp Ala Gln Ala Gln Glu Ala Val Leu Arg Glu Ala His Glu Arg Ala | | |
| 2429 | 1025 | 1030 | 1035 |
| 2430 | Gly Thr Ala Pro Ala Asp Val Arg Tyr Val Glu Leu His Gly Thr Gly | | 1040 |
| 2431 | 1045 | | 1050 |
| 2432 | Thr Pro Val Gly Asp Pro Ile Glu Ala Ala Ala Leu Gly Ala Ala Leu | | 1055 |
| 2433 | 1060 | 1065 | 1070 |
| 2434 | Gly Thr Gly Arg Pro Ala Gly Gln Pro Leu Leu Val Gly Ser Val Lys | | |
| 2435 | 1075 | 1080 | 1085 |
| 2436 | Thr Asn Ile Gly His Leu Glu Gly Ala Ala Gly Ile Ala Gly Leu Ile | | |
| 2437 | 1090 | 1095 | 1100 |
| 2438 | Lys Ala Val Leu Ala Val Arg Gly Arg Ala Leu Pro Ala Ser Leu Asn | | |
| 2439 | 1105 | 1110 | 1115 |
| 2440 | Tyr Glu Thr Pro Asn Pro Ala Ile Pro Phe Glu Glu Leu Asn Leu Arg | | 1120 |
| 2441 | 1125 | | 1130 |
| 2442 | Val Asn Thr Glu Tyr Leu Pro Trp Glu Pro Glu His Asp Gly Gln Arg | | 1135 |
| 2443 | 1140 | 1145 | 1150 |
| 2444 | Met Val Val Gly Val Ser Ser Phe Gly Met Gly Gly Thr Asn Ala His | | |
| 2445 | 1155 | 1160 | 1165 |
| 2446 | Val Val Leu Glu Glu Ala Pro Gly Gly Cys Arg Gly Ala Ser Val Val | | |
| 2447 | 1170 | 1175 | 1180 |
| 2448 | Glu Ser Thr Val Gly Gly Ser Ala Val Gly Gly Val Val Pro Trp | | |
| 2449 | 1185 | 1190 | 1195 |
| 2450 | Val Val Ser Ala Lys Ser Ala Ala Ala Leu Asp Ala Gln Ile Glu Arg | | 1200 |
| 2451 | 1205 | | 1210 |
| 2452 | Leu Ala Ala Phe Ala Ser Arg Asp Arg Thr Asp Gly Val Asp Ala Gly | | 1215 |
| 2453 | 1220 | 1225 | 1230 |
| 2454 | Ala Val Asp Ala Gly Ala Val Asp Ala Gly Ala Val Ala Arg Val Leu | | |
| 2455 | 1235 | 1240 | 1245 |
| 2456 | Ala Gly Gly Arg Ala Gln Phe Glu His Arg Ala Val Val Gly Ser | | |
| 2457 | 1250 | 1255 | 1260 |
| 2458 | Gly Pro Asp Asp Leu Ala Ala Leu Ala Ala Pro Glu Gly Leu Val | | |
| 2459 | 1265 | 1270 | 1275 |
| 2460 | Arg Gly Val Ala Ser Gly Val Gly Arg Val Ala Phe Val Phe Pro Gly | | 1280 |
| 2461 | 1285 | | 1290 |
| 2462 | Gln Gly Thr Gln Trp Ala Gly Met Gly Ala Glu Leu Leu Asp Ser Ser | | 1295 |
| 2463 | 1300 | 1305 | 1310 |
| 2464 | Ala Val Phe Ala Ala Ala Met Ala Glu Cys Glu Ala Ala Leu Ser Pro | | |
| 2465 | 1315 | 1320 | 1325 |
| 2466 | Tyr Val Asp Trp Ser Leu Glu Ala Val Val Arg Gln Ala Pro Gly Ala | | |
| 2467 | 1330 | 1335 | 1340 |
| 2468 | Pro Thr Leu Glu Arg Val Asp Val Val Gln Pro Val Thr Phe Ala Val | | |
| 2469 | 1345 | 1350 | 1355 |
| 2470 | Met Val Ser Leu Ala Arg Val Trp Gln His His Gly Val Thr Pro Gln | | 1360 |
| 2471 | 1365 | | 1370 |
| 2472 | Ala Val Val Gly His Ser Gln Gly Glu Ile Ala Ala Ala Tyr Val Ala | | 1375 |
| 2473 | 1380 | 1385 | 1390 |
| 2474 | Gly Ala Leu Ser Leu Asp Asp Ala Ala Arg Val Val Thr Leu Arg Ser | | |
| 2475 | 1395 | 1400 | 1405 |

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:28

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

2476 Lys Ser Ile Ala Ala His Leu Ala Gly Lys Gly Gly Met Leu Ser Leu
 2477 1410 1415 1420
 2478 Ala Leu Ser Glu Asp Ala Val Leu Glu Arg Leu Ala Gly Phe Asp Gly
 2479 1425 1430 1435 1440
 2480 Leu Ser Val Ala Ala Val Asn Gly Pro Thr Ala Thr Val Val Ser Gly
 2481 1445 1450 1455
 2482 Asp Pro Val Gln Ile Glu Glu Leu Ala Arg Ala Cys Glu Ala Asp Gly
 2483 1460 1465 1470
 2484 Val Arg Ala Arg Val Ile Pro Val Asp Tyr Ala Ser His Ser Arg Gln
 2485 1475 1480 1485
 2486 Val Glu Ile Ile Glu Ser Glu Leu Ala Glu Val Leu Ala Gly Leu Ser
 2487 1490 1495 1500
 2488 Pro Gln Ala Pro Arg Val Pro Phe Phe Ser Thr Leu Glu Gly Ala Trp
 2489 1505 1510 1515 1520
 2490 Ile Thr Glu Pro Val Leu Asp Gly Gly Tyr Trp Tyr Arg Asn Leu Arg
 2491 1525 1530 1535
 2492 His Arg Val Gly Phe Ala Pro Ala Val Glu Thr Leu Ala Thr Asp Glu
 2493 1540 1545 1550
 2494 Gly Phe Thr His Phe Val Glu Val Ser Ala His Pro Val Leu Thr Met
 2495 1555 1560 1565
 2496 Ala Leu Pro Gly Thr Val Thr Gly Leu Ala Thr Leu Arg Arg Asp Asn
 2497 1570 1575 1580
 2498 Gly Gly Gln Asp Arg Leu Val Ala Ser Leu Ala Glu Ala Trp Ala Asn
 2499 1585 1590 1595 1600
 2500 Gly Leu Ala Val Asp Trp Ser Pro Leu Leu Pro Ser Ala Thr Gly His
 2501 1605 1610 1615
 2502 His Ser Asp Leu Pro Thr Tyr Ala Phe Gln Thr Glu Arg His Trp Leu
 2503 1620 1625 1630
 2504 Gly Glu Ile Glu Ala Leu Ala Pro Ala Gly Glu Pro Ala Val Gln Pro
 2505 1635 1640 1645
 2506 Ala Val Leu Arg Thr Glu Ala Ala Glu Pro Ala Glu Leu Asp Arg Asp
 2507 1650 1655 1660
 2508 Glu Gln Leu Arg Val Ile Leu Asp Lys Val Arg Ala Gln Thr Ala Gln
 2509 1665 1670 1675 1680
 2510 Val Leu Gly Tyr Ala Thr Gly Gly Gln Ile Glu Val Asp Arg Thr Phe
 2511 1685 1690 1695
 2512 Arg Glu Ala Gly Cys Thr Ser Leu Thr Gly Val Asp Leu Arg Asn Arg
 2513 1700 1705 1710
 2514 Ile Asn Ala Ala Phe Gly Val Arg Met Ala Pro Ser Met Ile Phe Asp
 2515 1715 1720 1725
 2516 Phe Pro Thr Pro Glu Ala Leu Ala Glu Gln Leu Leu Leu Val Val His
 2517 1730 1735 1740
 2518 Gly Glu Ala Ala Ala Asn Pro Ala Gly Ala Glu Pro Ala Pro Val Ala
 2519 1745 1750 1755 1760
 2520 Ala Ala Gly Ala Val Asp Glu Pro Val Ala Ile Val Gly Met Ala Cys
 2521 1765 1770 1775
 2522 Arg Leu Pro Gly Gly Val Ala Ser Pro Glu Asp Leu Trp Arg Leu Val
 2523 1780 1785 1790
 2524 Ala Gly Gly Asp Ala Ile Ser Glu Phe Pro Gln Asp Arg Gly Trp

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:28

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

| | | | |
|------|---|------|------|
| 2525 | 1795 | 1800 | 1805 |
| 2526 | Asp Val Glu Gly Leu Tyr His Pro Asp Pro Glu His Pro Gly Thr Ser | | |
| 2527 | 1810 | 1815 | 1820 |
| 2528 | Tyr Val Arg Gln Gly Gly Phe Ile Glu Asn Val Ala Gly Phe Asp Ala | | |
| 2529 | 1825 | 1830 | 1835 |
| 2530 | Ala Phe Phe Gly Ile Ser Pro Arg Glu Ala Leu Ala Met Asp Pro Gln | | 1840 |
| 2531 | 1845 | 1850 | 1855 |
| 2532 | Gln Arg Leu Leu Leu Glu Thr Ser Trp Glu Ala Val Glu Asp Ala Gly | | |
| 2533 | 1860 | 1865 | 1870 |
| 2534 | Ile Asp Pro Thr Ser Leu Arg Gly Arg Gln Val Gly Val Phe Thr Gly | | |
| 2535 | 1875 | 1880 | 1885 |
| 2536 | Ala Met Thr His Glu Tyr Gly Pro Ser Leu Arg Asp Gly Gly Glu Gly | | |
| 2537 | 1890 | 1895 | 1900 |
| 2538 | Leu Asp Gly Tyr Leu Leu Thr Gly Asn Thr Ala Ser Val Met Ser Gly | | |
| 2539 | 1905 | 1910 | 1915 |
| 2540 | Arg Val Ser Tyr Thr Leu Gly Leu Glu Gly Pro Ala Leu Thr Val Asp | | 1920 |
| 2541 | 1925 | 1930 | 1935 |
| 2542 | Thr Ala Cys Ser Ser Ser Leu Val Ala Leu His Leu Ala Val Gln Ala | | |
| 2543 | 1940 | 1945 | 1950 |
| 2544 | Leu Arg Lys Gly Glu Val Asp Met Ala Leu Ala Gly Gly Val Ala Val | | |
| 2545 | 1955 | 1960 | 1965 |
| 2546 | Met Pro Thr Pro Gly Met Phe Val Glu Phe Ser Arg Gln Arg Gly Leu | | |
| 2547 | 1970 | 1975 | 1980 |
| 2548 | Ala Gly Asp Gly Arg Ser Lys Ala Phe Ala Ala Ser Ala Asp Gly Thr | | |
| 2549 | 1985 | 1990 | 1995 |
| 2550 | 2000 | | |
| 2551 | Ser Trp Ser Glu Gly Val Gly Val Leu Leu Val Glu Arg Leu Ser Asp | | |
| 2552 | 2005 | 2010 | 2015 |
| 2553 | Ala Arg Arg Asn Gly His Gln Val Leu Ala Val Val Arg Gly Ser Ala | | |
| 2554 | 2020 | 2025 | 2030 |
| 2555 | Leu Asn Gln Asp Gly Ala Ser Asn Gly Leu Thr Ala Pro Asn Gly Pro | | |
| 2556 | 2035 | 2040 | 2045 |
| 2557 | Ser Gln Gln Arg Val Ile Arg Arg Ala Leu Ala Asp Ala Arg Leu Thr | | |
| 2558 | 2050 | 2055 | 2060 |
| 2559 | Thr Ser Asp Val Asp Val Val Glu Ala His Gly Thr Gly Thr Arg Leu | | |
| 2560 | 2065 | 2070 | 2075 |
| 2561 | 2080 | | |
| 2562 | Gly Asp Pro Ile Glu Ala Gln Ala Leu Ile Ala Thr Tyr Gly Gln Gly | | |
| 2563 | 2085 | 2090 | 2095 |
| 2564 | Arg Asp Asp Glu Gln Pro Leu Arg Leu Gly Ser Leu Lys Ser Asn Ile | | |
| 2565 | 2100 | 2105 | 2110 |
| 2566 | Gly His Thr Gln Ala Ala Ala Gly Val Ser Gly Val Ile Lys Met Val | | |
| 2567 | 2115 | 2120 | 2125 |
| 2568 | Gln Ala Met Arg His Gly Leu Leu Pro Lys Thr Leu His Val Asp Glu | | |
| 2569 | 2130 | 2135 | 2140 |
| 2570 | Pro Ser Asp Gln Ile Asp Trp Ser Ala Gly Ala Val Glu Leu Leu Thr | | |
| 2571 | 2145 | 2150 | 2155 |
| 2572 | Glu Ala Val Asp Trp Pro Glu Lys Gln Asp Gly Gly Leu Arg Arg Ala | | 2160 |
| 2573 | 2165 | 2170 | 2175 |
| | | | |
| | Ala Val Ser Ser Phe Gly Ile Ser Gly Thr Asn Ala His Val Val Leu | | |
| | 2180 | 2185 | 2190 |

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:28

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

2574 Glu Glu Ala Pro Val Val Val Glu Gly Ala Ser Val Val Glu Pro Ser
 2575 2195 2200 2205
 2576 Val Gly Gly Ser Ala Val Gly Gly Gly Val Thr Pro Trp Val Val Ser
 2577 2210 2215 2220
 2578 Ala Lys Ser Ala Ala Ala Leu Asp Ala Gln Ile Glu Arg Leu Ala Ala
 2579 2225 2230 2235 2240
 2580 Phe Ala Ser Arg Asp Arg Thr Asp Asp Ala Asp Ala Gly Ala Val Asp
 2581 2245 2250 2255
 2582 Ala Gly Ala Val Ala His Val Leu Ala Asp Gly Arg Ala Gln Phe Glu
 2583 2260 2265 2270
 2584 His Arg Ala Val Ala Leu Gly Ala Gly Ala Asp Asp Leu Val Gln Ala
 2585 2275 2280 2285
 2586 Leu Ala Asp Pro Asp Gly Leu Ile Arg Gly Thr Ala Ser Gly Val Gly
 2587 2290 2295 2300
 2588 Arg Val Ala Phe Val Phe Pro Gly Gln Gly Thr Gln Trp Ala Gly Met
 2589 2305 2310 2315 2320
 2590 Gly Ala Glu Leu Leu Asp Ser Ser Ala Val Phe Ala Ala Ala Met Ala
 2591 2325 2330 2335
 2592 Glu Cys Glu Ala Ala Leu Ser Pro Tyr Val Asp Trp Ser Leu Glu Ala
 2593 2340 2345 2350
 2594 Val Val Arg Gln Ala Pro Gly Ala Pro Thr Leu Glu Arg Val Asp Val
 2595 2355 2360 2365
 2596 Val Gln Pro Val Thr Phe Ala Val Met Val Ser Leu Ala Arg Val Trp
 2597 2370 2375 2380
 2598 Gln His His Gly Val Thr Pro Gln Ala Val Val Gly His Ser Gln Gly
 2599 2385 2390 2395 2400
 2600 Glu Ile Ala Ala Ala Tyr Val Ala Gly Ala Leu Pro Leu Asp Asp Ala
 2601 2405 2410 2415
 2602 Ala Arg Val Val Thr Leu Arg Ser Lys Ser Ile Ala Ala His Leu Ala
 2603 2420 2425 2430
 2604 Gly Lys Gly Gly Met Leu Ser Leu Ala Leu Asn Glu Asp Ala Val Leu
 2605 2435 2440 2445
 2606 Glu Arg Leu Ser Asp Phe Asp Gly Leu Ser Val Ala Ala Val Asn Gly
 2607 2450 2455 2460
 2608 Pro Thr Ala Thr Val Val Ser Gly Asp Pro Val Gln Ile Glu Glu Leu
 2609 2465 2470 2475 2480
 2610 Ala Gln Ala Cys Lys Ala Asp Gly Phe Arg Ala Arg Ile Ile Pro Val
 2611 2485 2490 2495
 2612 Asp Tyr Ala Ser His Ser Arg Gln Val Glu Ile Ile Glu Ser Glu Leu
 2613 2500 2505 2510
 2614 Ala Gln Val Leu Ala Gly Leu Ser Pro Gln Ala Pro Arg Val Pro Phe
 2615 2515 2520 2525
 2616 Phe Ser Thr Leu Glu Gly Thr Trp Ile Thr Glu Pro Val Leu Asp Gly
 2617 2530 2535 2540
 2618 Thr Tyr Trp Tyr Arg Asn Leu Arg His Arg Val Gly Phe Ala Pro Ala
 2619 2545 2550 2555 2560
 2620 Ile Glu Thr Leu Ala Val Asp Glu Gly Phe Thr His Phe Val Glu Val
 2621 2565 2570 2575
 2622 Ser Ala His Pro Val Leu Thr Met Thr Leu Pro Glu Thr Val Thr Gly

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:28

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

| | | | |
|------|---|-------------|------|
| 2623 | 2580 | 2585 | 2590 |
| 2624 | Leu Gly Thr Leu Arg Arg Glu Gln Gly Gly Gln Glu Arg | Leu Val Thr | |
| 2625 | 2595 | 2600 | 2605 |
| 2626 | Ser Leu Ala Glu Ala Trp Val Asn Gly Leu Pro Val Ala Trp Thr Ser | | |
| 2627 | 2610 | 2615 | 2620 |
| 2628 | Leu Leu Pro Ala Thr Ala Ser Arg Pro Gly Leu Pro Thr Tyr Ala Phe | | |
| 2629 | 2625 | 2630 | 2635 |
| 2630 | Gln Ala Glu Arg Tyr Trp Leu Glu Asn Thr Pro Ala Ala Leu Ala Thr | | 2640 |
| 2631 | 2645 | 2650 | 2655 |
| 2632 | Gly Asp Asp Trp Arg Tyr Arg Ile Asp Trp Lys Arg Leu Pro Ala Ala | | |
| 2633 | 2660 | 2665 | 2670 |
| 2634 | Glu Gly Ser Glu Arg Thr Gly Leu Ser Gly Arg Trp Leu Ala Val Thr | | |
| 2635 | 2675 | 2680 | 2685 |
| 2636 | Pro Glu Asp His Ser Ala Gln Ala Ala Ala Val Leu Thr Ala Leu Val | | |
| 2637 | 2690 | 2695 | 2700 |
| 2638 | Asp Ala Gly Ala Lys Val Glu Val Leu Thr Ala Gly Ala Asp Asp Asp | | |
| 2639 | 2705 | 2710 | 2715 |
| 2640 | Arg Glu Ala Leu Ala Ala Arg Leu Thr Ala Leu Thr Thr Gly Asp Gly | | 2720 |
| 2641 | 2725 | 2730 | 2735 |
| 2642 | Phe Thr Gly Val Val Ser Leu Leu Asp Gly Leu Val Pro Gln Val Ala | | |
| 2643 | 2740 | 2745 | 2750 |
| 2644 | Trp Val Gln Ala Leu Gly Asp Ala Gly Ile Lys Ala Pro Leu Trp Ser | | |
| 2645 | 2755 | 2760 | 2765 |
| 2646 | Val Thr Gln Gly Ala Val Ser Val Gly Arg Leu Asp Thr Pro Ala Asp | | |
| 2647 | 2770 | 2775 | 2780 |
| 2648 | Pro Asp Arg Ala Met Leu Trp Gly Leu Gly Arg Val Val Ala Leu Glu | | |
| 2649 | 2785 | 2790 | 2795 |
| 2650 | His Pro Glu Arg Trp Ala Gly Leu Val Asp Leu Pro Ala Gln Pro Asp | | 2800 |
| 2651 | 2805 | 2810 | 2815 |
| 2652 | Ala Ala Ala Leu Ala His Leu Val Thr Ala Leu Ser Gly Ala Thr Gly | | |
| 2653 | 2820 | 2825 | 2830 |
| 2654 | Glu Asp Gln Ile Ala Ile Arg Thr Thr Gly Leu His Ala Arg Arg Leu | | |
| 2655 | 2835 | 2840 | 2845 |
| 2656 | Ala Arg Ala Pro Leu His Gly Arg Arg Pro Thr Arg Asp Trp Gln Pro | | |
| 2657 | 2850 | 2855 | 2860 |
| 2658 | His Gly Thr Val Leu Ile Thr Gly Gly Thr Gly Ala Leu Gly Ser His | | |
| 2659 | 2865 | 2870 | 2875 |
| 2660 | Ala Ala Arg Trp Met Ala His His Gly Ala Glu His Leu Leu Val | | 2880 |
| 2661 | 2885 | 2890 | 2895 |
| 2662 | Ser Arg Ser Gly Glu Gln Ala Pro Gly Ala Thr Gln Leu Thr Ala Glu | | |
| 2663 | 2900 | 2905 | 2910 |
| 2664 | Leu Thr Ala Ser Gly Ala Arg Val Thr Ile Ala Ala Cys Asp Val Ala | | |
| 2665 | 2915 | 2920 | 2925 |
| 2666 | Asp Pro His Ala Met Arg Thr Leu Leu Asp Ala Ile Pro Ala Glu Thr | | |
| 2667 | 2930 | 2935 | 2940 |
| 2668 | Pro Leu Thr Ala Val Val His Thr Ala Gly Ala Leu Asp Asp Gly Ile | | |
| 2669 | 2945 | 2950 | 2955 |
| 2670 | Val Asp Thr Leu Thr Ala Glu Gln Val Arg Arg Ala His Arg Ala Lys | | 2960 |
| 2671 | 2965 | 2970 | 2975 |

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

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Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

| | | | | |
|------|---|------|------|------|
| 2672 | Ala Val Gly Ala Ser Val Leu Asp Glu Leu Thr Arg Asp Leu Asp Leu | | | |
| 2673 | 2980 | 2985 | 2990 | |
| 2674 | Asp Ala Phe Val Leu Phe Ser Ser Val Ser Ser Thr Leu Gly Ile Pro | | | |
| 2675 | 2995 | 3000 | 3005 | |
| 2676 | Gly Gln Gly Asn Tyr Ala Pro His Asn Ala Tyr Leu Asp Ala Leu Ala | | | |
| 2677 | 3010 | 3015 | 3020 | |
| 2678 | Ala Arg Arg Arg Ala Thr Gly Arg Ser Ala Val Ser Val Ala Trp Gly | | | |
| 2679 | 3025 | 3030 | 3035 | 3040 |
| 2680 | Pro Trp Asp Gly Gly Met Ala Ala Gly Asp Gly Val Ala Glu Arg | | | |
| 2681 | 3045 | 3050 | 3055 | |
| 2682 | Leu Arg Asn His Gly Val Pro Gly Met Asp Pro Glu Leu Ala Leu Ala | | | |
| 2683 | 3060 | 3065 | 3070 | |
| 2684 | Ala Leu Glu Ser Ala Leu Gly Arg Asp Glu Thr Ala Ile Thr Val Ala | | | |
| 2685 | 3075 | 3080 | 3085 | |
| 2686 | Asp Ile Asp Trp Asp Arg Phe Tyr Leu Ala Tyr Ser Ser Gly Arg Pro | | | |
| 2687 | 3090 | 3095 | 3100 | |
| 2688 | Gln Pro Leu Val Glu Glu Leu Pro Glu Val Arg Arg Ile Ile Asp Ala | | | |
| 2689 | 3105 | 3110 | 3115 | 3120 |
| 2690 | Arg Asp Ser Ala Thr Ser Gly Gln Gly Gly Ser Ser Ala Gln Gly Ala | | | |
| 2691 | 3125 | 3130 | 3135 | |
| 2692 | Asn Pro Leu Ala Glu Arg Leu Ala Ala Ala Pro Gly Glu Arg Thr | | | |
| 2693 | 3140 | 3145 | 3150 | |
| 2694 | Glu Ile Leu Leu Gly Leu Val Arg Ala Gln Ala Ala Ala Val Leu Arg | | | |
| 2695 | 3155 | 3160 | 3165 | |
| 2696 | Met Arg Ser Pro Glu Asp Val Ala Ala Asp Arg Ala Phe Lys Asp Ile | | | |
| 2697 | 3170 | 3175 | 3180 | |
| 2698 | Gly Phe Asp Ser Leu Ala Gly Val Glu Leu Arg Asn Arg Leu Thr Arg | | | |
| 2699 | 3185 | 3190 | 3195 | 3200 |
| 2700 | Ala Thr Gly Leu Gln Leu Pro Ala Thr Leu Val Phe Asp His Pro Thr | | | |
| 2701 | 3205 | 3210 | 3215 | |
| 2702 | Pro Leu Ala Leu Val Ser Leu Leu Arg Ser Glu Phe Leu Gly Asp Glu | | | |
| 2703 | 3220 | 3225 | 3230 | |
| 2704 | Glu Thr Ala Asp Ala Arg Arg Ser Ala Ala Leu Pro Ala Thr Val Gly | | | |
| 2705 | 3235 | 3240 | 3245 | |
| 2706 | Ala Gly Ala Gly Ala Gly Thr Asp Ala Asp Asp Asp Pro Ile | | | |
| 2707 | 3250 | 3255 | 3260 | |
| 2708 | Ala Ile Val Ala Met Ser Cys Arg Tyr Pro Gly Asp Ile Arg Ser Pro | | | |
| 2709 | 3265 | 3270 | 3275 | 3280 |
| 2710 | Glu Asp Leu Trp Arg Met Leu Ser Glu Gly Gly Glu Gly Ile Thr Pro | | | |
| 2711 | 3285 | 3290 | 3295 | |
| 2712 | Phe Pro Thr Asp Arg Gly Trp Asp Leu Asp Gly Leu Tyr Asp Ala Asp | | | |
| 2713 | 3300 | 3305 | 3310 | |
| 2714 | Pro Asp Ala Leu Gly Arg Ala Tyr Val Arg Glu Gly Gly Phe Leu His | | | |
| 2715 | 3315 | 3320 | 3325 | |
| 2716 | Asp Ala Ala Glu Phe Asp Ala Glu Phe Phe Gly Val Ser Pro Arg Glu | | | |
| 2717 | 3330 | 3335 | 3340 | |
| 2718 | Ala Leu Ala Met Asp Pro Gln Gln Arg Met Leu Leu Thr Thr Ser Trp | | | |
| 2719 | 3345 | 3350 | 3355 | 3360 |
| 2720 | Glu Ala Phe Glu Arg Ala Gly Ile Glu Pro Ala Ser Leu Arg Gly Ser | | | |

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

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Input Set : A:\Sequence Listing.txt
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| | | | |
|------|---|------|------|
| 2721 | 3365 | 3370 | 3375 |
| 2722 | Ser Thr Gly Val Phe Ile Gly Leu Ser Tyr Gln Asp Tyr Ala Ala Arg | | |
| 2723 | 3380 | 3385 | 3390 |
| 2724 | Val Pro Asn Ala Pro Arg Gly Val Glu Gly Tyr Leu Leu Thr Gly Ser | | |
| 2725 | 3395 | 3400 | 3405 |
| 2726 | Thr Pro Ser Val Ala Ser Gly Arg Ile Ala Tyr Thr Phe Gly Leu Glu | | |
| 2727 | 3410 | 3415 | 3420 |
| 2728 | Gly Pro Ala Thr Thr Val Asp Thr Ala Cys Ser Ser Ser Leu Thr Ala | | |
| 2729 | 3425 | 3430 | 3435 |
| 2730 | Leu His Leu Ala Val Arg Ala Leu Arg Ser Gly Glu Cys Thr Met Ala | | |
| 2731 | 3445 | 3450 | 3455 |
| 2732 | Leu Ala Gly Gly Val Ala Met Met Ala Thr Pro His Met Phe Val Glu | | |
| 2733 | 3460 | 3465 | 3470 |
| 2734 | Phe Ser Arg Gln Arg Ala Leu Ala Pro Asp Gly Arg Ser Lys Ala Phe | | |
| 2735 | 3475 | 3480 | 3485 |
| 2736 | Ser Ala Asp Ala Asp Gly Phe Gly Ala Ala Glu Gly Val Gly Leu Leu | | |
| 2737 | 3490 | 3495 | 3500 |
| 2738 | Leu Val Glu Arg Leu Ser Asp Ala Arg Arg Asn Gly His Pro Val Leu | | |
| 2739 | 3505 | 3510 | 3515 |
| 2740 | Ala Val Val Arg Gly Thr Ala Val Asn Gln Asp Gly Ala Ser Asn Gly | | |
| 2741 | 3525 | 3530 | 3535 |
| 2742 | Leu Thr Ala Pro Asn Gly Pro Ser Gln Gln Arg Val Ile Arg Gln Ala | | |
| 2743 | 3540 | 3545 | 3550 |
| 2744 | Leu Ala Asp Ala Arg Leu Ala Pro Gly Asp Ile Asp Ala Val Glu Thr | | |
| 2745 | 3555 | 3560 | 3565 |
| 2746 | His Gly Thr Gly Thr Ser Leu Gly Asp Pro Ile Glu Ala Gln Gly Leu | | |
| 2747 | 3570 | 3575 | 3580 |
| 2748 | Gln Ala Thr Tyr Gly Lys Glu Arg Pro Ala Glu Arg Pro Leu Ala Ile | | |
| 2749 | 3585 | 3590 | 3595 |
| 2750 | Gly Ser Val Lys Ser Asn Ile Gly His Thr Gln Ala Ala Ala Gly Ala | | |
| 2751 | 3605 | 3610 | 3615 |
| 2752 | Ala Gly Ile Ile Lys Met Val Leu Ala Met Arg His Gly Thr Leu Pro | | |
| 2753 | 3620 | 3625 | 3630 |
| 2754 | Lys Thr Leu His Ala Asp Glu Pro Ser Pro His Val Asp Trp Ala Asn | | |
| 2755 | 3635 | 3640 | 3645 |
| 2756 | Ser Gly Leu Ala Leu Val Thr Glu Pro Ile Asp Trp Pro Ala Gly Thr | | |
| 2757 | 3650 | 3655 | 3660 |
| 2758 | Gly Pro Arg Arg Ala Ala Val Ser Ser Phe Gly Ile Ser Gly Thr Asn | | |
| 2759 | 3665 | 3670 | 3675 |
| 2760 | Ala His Val Val Leu Glu Gln Ala Pro Asp Ala Ala Gly Glu Val Leu | | |
| 2761 | 3685 | 3690 | 3695 |
| 2762 | Gly Ala Asp Glu Val Pro Glu Val Ser Glu Thr Val Ala Met Ala Gly | | |
| 2763 | 3700 | 3705 | 3710 |
| 2764 | Thr Ala Gly Thr Ser Glu Val Ala Glu Gly Ser Glu Ala Ser Glu Ala | | |
| 2765 | 3715 | 3720 | 3725 |
| 2766 | Pro Ala Ala Pro Gly Ser Arg Glu Ala Ser Leu Pro Gly His Leu Pro | | |
| 2767 | 3730 | 3735 | 3740 |
| 2768 | Trp Val Leu Ser Ala Lys Asp Glu Gln Ser Leu Arg Gly Gln Ala Ala | | |
| 2769 | 3745 | 3750 | 3755 |

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PATENT APPLICATION: US/09/988,384

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Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

| | | | | |
|------|---|------|------|------|
| 2770 | Ala Leu His Ala Trp Leu Ser Glu Pro Ala Ala Asp Leu Ser Asp Ala | | | |
| 2771 | 3765 | 3770 | 3775 | |
| 2772 | Asp Gly Pro Ala Arg Leu Arg Asp Val Gly Tyr Thr Leu Ala Thr Ser | | | |
| 2773 | 3780 | 3785 | 3790 | |
| 2774 | Arg Thr Ala Phe Ala His Arg Ala Ala Val Thr Ala Ala Asp Arg Asp | | | |
| 2775 | 3795 | 3800 | 3805 | |
| 2776 | Gly Phe Leu Asp Gly Leu Ala Thr Leu Ala Gln Gly Gly Thr Ser Ala | | | |
| 2777 | 3810 | 3815 | 3820 | |
| 2778 | His Val His Leu Asp Thr Ala Arg Asp Gly Thr Thr Ala Phe Leu Phe | | | |
| 2779 | 3825 | 3830 | 3835 | 3840 |
| 2780 | Thr Gly Gln Gly Ser Gln Arg Pro Gly Ala Gly Arg Glu Leu Tyr Asp | | | |
| 2781 | 3845 | 3850 | 3855 | |
| 2782 | Arg His Pro Val Phe Ala Arg Ala Leu Asp Glu Ile Cys Ala His Leu | | | |
| 2783 | 3860 | 3865 | 3870 | |
| 2784 | Asp Gly His Leu Glu Leu Pro Leu Leu Asp Val Met Phe Ala Ala Glu | | | |
| 2785 | 3875 | 3880 | 3885 | |
| 2786 | Gly Ser Ala Glu Ala Ala Leu Leu Asp Glu Thr Arg Tyr Thr Gln Cys | | | |
| 2787 | 3890 | 3895 | 3900 | |
| 2788 | Ala Leu Phe Ala Leu Glu Val Ala Leu Phe Arg Leu Val Glu Ser Trp | | | |
| 2789 | 3905 | 3910 | 3915 | 3920 |
| 2790 | Gly Met Arg Pro Ala Ala Leu Leu Gly His Ser Val Gly Glu Ile Ala | | | |
| 2791 | 3925 | 3930 | 3935 | |
| 2792 | Ala Ala His Val Ala Gly Val Phe Ser Leu Ala Asp Ala Ala Arg Leu | | | |
| 2793 | 3940 | 3945 | 3950 | |
| 2794 | Val Ala Ala Arg Gly Arg Leu Met Gln Glu Leu Pro Ala Gly Gly Ala | | | |
| 2795 | 3955 | 3960 | 3965 | |
| 2796 | Met Leu Ala Val Gln Ala Ala Glu Asp Glu Ile Arg Val Trp Leu Glu | | | |
| 2797 | 3970 | 3975 | 3980 | |
| 2798 | Thr Glu Glu Arg Tyr Ala Gly Arg Leu Asp Val Ala Ala Val Asn Gly | | | |
| 2799 | 3985 | 3990 | 3995 | 4000 |
| 2800 | Pro Glu Ala Ala Val Leu Ser Gly Asp Ala Asp Ala Ala Arg Glu Ala | | | |
| 2801 | 4005 | 4010 | 4015 | |
| 2802 | Glu Ala Tyr Trp Ser Gly Leu Gly Arg Arg Thr Arg Ala Leu Arg Val | | | |
| 2803 | 4020 | 4025 | 4030 | |
| 2804 | Ser His Ala Phe His Ser Ala His Met Asp Gly Met Leu Asp Gly Phe | | | |
| 2805 | 4035 | 4040 | 4045 | |
| 2806 | Arg Ala Val Leu Glu Thr Val Glu Phe Arg Arg Pro Ser Leu Thr Val | | | |
| 2807 | 4050 | 4055 | 4060 | |
| 2808 | Val Ser Asn Val Thr Gly Leu Ala Ala Gly Pro Asp Asp Leu Cys Asp | | | |
| 2809 | 4065 | 4070 | 4075 | 4080 |
| 2810 | Pro Glu Tyr Trp Val Arg His Val Arg Gly Thr Val Arg Phe Leu Asp | | | |
| 2811 | 4085 | 4090 | 4095 | |
| 2812 | Gly Val Arg Val Leu Arg Asp Leu Gly Val Arg Thr Cys Leu Glu Leu | | | |
| 2813 | 4100 | 4105 | 4110 | |
| 2814 | Gly Pro Asp Gly Val Leu Thr Ala Met Ala Ala Asp Gly Leu Ala Asp | | | |
| 2815 | 4115 | 4120 | 4125 | |
| 2816 | Thr Pro Ala Asp Ser Ala Ala Gly Ser Pro Val Gly Ser Pro Ala Gly | | | |
| 2817 | 4130 | 4135 | 4140 | |
| 2818 | Ser Pro Ala Asp Ser Ala Ala Gly Ala Leu Arg Pro Arg Pro Leu Leu | | | |

RAW SEQUENCE LISTING
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Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

| | | | | |
|------|---|------|------|------|
| 2819 | 4145 | 4150 | 4155 | 4160 |
| 2820 | Val Ala Leu Leu Arg Arg Lys Arg Ser Glu Thr Glu Thr Val Ala Asp | | | |
| 2821 | 4165 | 4170 | 4175 | |
| 2822 | Ala Leu Gly Arg Ala His Ala His Gly Thr Gly Pro Asp Trp His Ala | | | |
| 2823 | 4180 | 4185 | 4190 | |
| 2824 | Trp Phe Ala Gly Ser Gly Ala His Arg Val Asp Leu Pro Thr Tyr Ser | | | |
| 2825 | 4195 | 4200 | 4205 | |
| 2826 | Phe Arg Arg Asp Arg Tyr Trp Leu Asp Ala Pro Ala Ala Asp Thr Ala | | | |
| 2827 | 4210 | 4215 | 4220 | |
| 2828 | Val Asp Thr Ala Gly Leu Gly Leu Gly Thr Ala Asp His Pro Leu Leu | | | |
| 2829 | 4225 | 4230 | 4235 | 4240 |
| 2830 | Gly Ala Val Val Ser Leu Pro Asp Arg Asp Gly Leu Leu Leu Thr Gly | | | |
| 2831 | 4245 | 4250 | 4255 | |
| 2832 | Arg Leu Ser Leu Arg Thr His Pro Trp Leu Ala Asp His Ala Val Leu | | | |
| 2833 | 4260 | 4265 | 4270 | |
| 2834 | Gly Ser Val Leu Leu Pro Gly Ala Ala Met Val Glu Leu Ala Ala His | | | |
| 2835 | 4275 | 4280 | 4285 | |
| 2836 | Ala Ala Glu Ser Ala Gly Leu Arg Asp Val Arg Glu Leu Thr Leu Leu | | | |
| 2837 | 4290 | 4295 | 4300 | |
| 2838 | Glu Pro Leu Val Leu Pro Glu His Gly Gly Val Glu Leu Arg Val Thr | | | |
| 2839 | 4305 | 4310 | 4315 | 4320 |
| 2840 | Val Gly Ala Pro Ala Gly Glu Pro Gly Gly Glu Ser Ala Gly Asp Gly | | | |
| 2841 | 4325 | 4330 | 4335 | |
| 2842 | Ala Arg Pro Val Ser Leu His Ser Arg Leu Ala Asp Ala Pro Ala Gly | | | |
| 2843 | 4340 | 4345 | 4350 | |
| 2844 | Thr Ala Trp Ser Cys His Ala Thr Gly Leu Leu Ala Thr Asp Arg Pro | | | |
| 2845 | 4355 | 4360 | 4365 | |
| 2846 | Glu Leu Pro Val Ala Pro Asp Arg Ala Ala Met Trp Pro Pro Gln Gly | | | |
| 2847 | 4370 | 4375 | 4380 | |
| 2848 | Ala Glu Glu Val Pro Leu Asp Gly Leu Tyr Glu Arg Leu Asp Gly Asn | | | |
| 2849 | 4385 | 4390 | 4395 | 4400 |
| 2850 | Gly Leu Ala Phe Gly Pro Leu Phe Gln Gly Leu Asn Ala Val Trp Arg | | | |
| 2851 | 4405 | 4410 | 4415 | |
| 2852 | Tyr Glu Gly Glu Val Phe Ala Asp Ile Ala Leu Pro Ala Thr Thr Asn | | | |
| 2853 | 4420 | 4425 | 4430 | |
| 2854 | Ala Thr Ala Pro Ala Thr Ala Asn Gly Gly Ser Ala Ala Ala Ala | | | |
| 2855 | 4435 | 4440 | 4445 | |
| 2856 | Pro Tyr Gly Ile His Pro Ala Leu Leu Asp Ala Ser Leu His Ala Ile | | | |
| 2857 | 4450 | 4455 | 4460 | |
| 2858 | Ala Val Gly Gly Leu Val Asp Glu Pro Glu Leu Val Arg Val Pro Phe | | | |
| 2859 | 4465 | 4470 | 4475 | 4480 |
| 2860 | His Trp Ser Gly Val Thr Val His Ala Ala Gly Ala Ala Ala Ala Arg | | | |
| 2861 | 4485 | 4490 | 4495 | |
| 2862 | Val Arg Leu Ala Ser Ala Gly Thr Asp Ala Val Ser Leu Ser Leu Thr | | | |
| 2863 | 4500 | 4505 | 4510 | |
| 2864 | Asp Gly Glu Gly Arg Pro Leu Val Ser Val Glu Arg Leu Thr Leu Arg | | | |
| 2865 | 4515 | 4520 | 4525 | |
| 2866 | Pro Val Thr Ala Asp Gln Ala Ala Ala Ser Arg Val Gly Gly Leu Met | | | |
| 2867 | 4530 | 4535 | 4540 | |

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Input Set : A:\Sequence Listing.txt
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2868 His Arg Val Ala Trp Arg Pro Tyr Ala Leu Ala Ser Ser Gly Glu Gln
 2869 4545 4550 4555 4560
 2870 Asp Pro His Ala Thr Ser Tyr Gly Pro Thr Ala Val Leu Gly Lys Asp
 2871 4565 4570 4575
 2872 Glu Leu Lys Val Ala Ala Ala Leu Glu Ser Ala Gly Val Glu Val Gly
 2873 4580 4585 4590
 2874 Leu Tyr Pro Asp Leu Ala Ala Leu Ser Gln Asp Val Ala Ala Gly Ala
 2875 4595 4600 4605
 2876 Pro Ala Pro Arg Thr Val Leu Ala Pro Leu Pro Ala Gly Pro Ala Asp
 2877 4610 4615 4620
 2878 Gly Gly Ala Glu Gly Val Arg Gly Thr Val Ala Arg Thr Leu Glu Leu
 2879 4625 4630 4635 4640
 2880 Leu Gln Ala Trp Leu Ala Asp Glu His Leu Ala Gly Thr Arg Leu Leu
 2881 4645 4650 4655
 2882 Leu Val Thr Arg Gly Ala Val Arg Asp Pro Glu Gly Ser Gly Ala Asp
 2883 4660 4665 4670
 2884 Asp Gly Gly Glu Asp Leu Ser His Ala Ala Ala Trp Gly Leu Val Arg
 2885 4675 4680 4685
 2886 Thr Ala Gln Thr Glu Asn Pro Gly Arg Phe Gly Leu Leu Asp Leu Ala
 2887 4690 4695 4700
 2888 Asp Asp Ala Ser Ser Tyr Arg Thr Leu Pro Ser Val Leu Ser Asp Ala
 2889 4705 4710 4715 4720
 2890 Gly Leu Arg Asp Glu Pro Gln Leu Ala Leu His Asp Gly Thr Ile Arg
 2891 4725 4730 4735
 2892 Leu Ala Arg Leu Ala Ser Val Arg Pro Glu Thr Gly Thr Ala Ala Pro
 2893 4740 4745 4750
 2894 Ala Leu Ala Pro Glu Gly Thr Val Leu Leu Thr Gly Gly Thr Gly Gly
 2895 4755 4760 4765
 2896 Leu Gly Gly Leu Val Ala Arg His Val Val Gly Glu Trp Gly Val Arg
 2897 4770 4775 4780
 2898 Arg Leu Leu Leu Val Ser Arg Arg Gly Thr Asp Ala Pro Gly Ala Asp
 2899 4785 4790 4795 4800
 2900 Glu Leu Val His Glu Leu Glu Ala Leu Gly Ala Asp Val Ser Val Ala
 2901 4805 4810 4815
 2902 Ala Cys Asp Val Ala Asp Arg Glu Ala Leu Thr Ala Val Leu Asp Ala
 2903 4820 4825 4830
 2904 Ile Pro Ala Glu His Pro Leu Thr Ala Val Val His Thr Ala Gly Val
 2905 4835 4840 4845
 2906 Leu Ser Asp Gly Thr Leu Pro Ser Met Thr Thr Glu Asp Val Glu His
 2907 4850 4855 4860
 2908 Val Leu Arg Pro Lys Val Asp Ala Ala Phe Leu Leu Asp Glu Leu Thr
 2909 4865 4870 4875 4880
 2910 Ser Thr Pro Ala Tyr Asp Leu Ala Ala Phe Val Met Phe Ser Ser Ala
 2911 4885 4890 4895
 2912 Ala Ala Val Phe Gly Gly Ala Gly Gln Gly Ala Tyr Ala Ala Asn
 2913 4900 4905 4910
 2914 Ala Thr Leu Asp Ala Leu Ala Trp Arg Arg Arg Ala Ala Gly Leu Pro
 2915 4915 4920 4925
 2916 Ala Leu Ser Leu Gly Trp Gly Leu Trp Ala Glu Thr Ser Gly Met Thr

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Input Set : A:\Sequence Listing.txt
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| | | | |
|------|---|------|------|
| 2917 | 4930 | 4935 | 4940 |
| 2918 | Gly Glu Leu Gly Gln Ala Asp Leu Arg Arg Met Ser Arg Ala Gly Ile | | |
| 2919 | 4945 | 4950 | 4955 |
| 2920 | Gly Gly Ile Ser Asp Ala Glu Gly Ile Ala Leu Leu Asp Ala Ala Leu | | 4960 |
| 2921 | 4965 | 4970 | 4975 |
| 2922 | Arg Asp Asp Arg His Pro Val Leu Leu Pro Leu Arg Leu Asp Ala Ala | | |
| 2923 | 4980 | 4985 | 4990 |
| 2924 | Gly Leu Arg Asp Ala Ala Gly Asn Asp Pro Ala Gly Ile Pro Ala Leu | | |
| 2925 | 4995 | 5000 | 5005 |
| 2926 | Phe Arg Asp Val Val Gly Ala Arg Thr Val Arg Ala Arg Pro Ser Ala | | |
| 2927 | 5010 | 5015 | 5020 |
| 2928 | Ala Ser Ala Ser Thr Thr Ala Gly Thr Ala Gly Thr Pro Gly Thr Ala | | |
| 2929 | 5025 | 5030 | 5035 |
| 2930 | Asp Gly Ala Ala Glu Thr Ala Ala Val Thr Leu Ala Asp Arg Ala Ala | | 5040 |
| 2931 | 5045 | 5050 | 5055 |
| 2932 | Thr Val Asp Gly Pro Ala Arg Gln Arg Leu Leu Leu Glu Phe Val Val | | |
| 2933 | 5060 | 5065 | 5070 |
| 2934 | Gly Glu Val Ala Glu Val Leu Gly His Ala Arg Gly His Arg Ile Asp | | |
| 2935 | 5075 | 5080 | 5085 |
| 2936 | Ala Glu Arg Gly Phe Leu Asp Leu Gly Phe Asp Ser Leu Thr Ala Val | | |
| 2937 | 5090 | 5095 | 5100 |
| 2938 | Glu Leu Arg Asn Arg Leu Asn Ser Ala Gly Gly Leu Ala Leu Pro Ala | | |
| 2939 | 5105 | 5110 | 5115 |
| 2940 | Thr Leu Val Phe Asp His Pro Ser Pro Ala Ala Leu Ala Ser His Leu | | 5120 |
| 2941 | 5125 | 5130 | 5135 |
| 2942 | Asp Ala Glu Leu Pro Arg Gly Ala Ser Asp Gln Asp Gly Ala Gly Asn | | |
| 2943 | 5140 | 5145 | 5150 |
| 2944 | Arg Asn Gly Asn Glu Asn Gly Thr Thr Ala Ser Arg Ser Thr Ala Glu | | |
| 2945 | 5155 | 5160 | 5165 |
| 2946 | Thr Asp Ala Leu Leu Ala Gln Leu Thr Arg Leu Glu Gly Ala Leu Val | | |
| 2947 | 5170 | 5175 | 5180 |
| 2948 | Leu Thr Gly Leu Ser Asp Ala Pro Gly Ser Glu Glu Val Leu Glu His | | |
| 2949 | 5185 | 5190 | 5195 |
| 2950 | Leu Arg Ser Leu Arg Ser Met Val Thr Gly Glu Thr Gly Thr Gly Thr | | 5200 |
| 2951 | 5205 | 5210 | 5215 |
| 2952 | Ala Ser Gly Ala Pro Asp Gly Ala Gly Ser Gly Ala Glu Asp Arg Pro | | |
| 2953 | 5220 | 5225 | 5230 |
| 2954 | Trp Ala Ala Gly Asp Gly Ala Gly Gly Ser Glu Asp Gly Ala Gly | | |
| 2955 | 5235 | 5240 | 5245 |
| 2956 | Val Pro Asp Phe Met Asn Ala Ser Ala Glu Glu Leu Phe Gly Leu Leu | | |
| 2957 | 5250 | 5255 | 5260 |
| 2958 | Asp Gln Asp Pro Ser Thr Asp Met Ser Thr Val Asn Glu Glu Lys Tyr | | |
| 2959 | 5265 | 5270 | 5275 |
| 2960 | Leu Asp Tyr Leu Arg Arg Ala Thr Ala Asp Leu His Glu Ala Arg Gly | | 5280 |
| 2961 | 5285 | 5290 | 5295 |
| 2962 | Arg Leu Arg Glu Leu Glu Ala Lys Ala Gly Glu Pro Val Ala Ile Val | | |
| 2963 | 5300 | 5305 | 5310 |
| 2964 | Gly Met Ala Cys Arg Leu Pro Gly Gly Val Ala Ser Pro Glu Asp Leu | | |
| 2965 | 5315 | 5320 | 5325 |

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

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Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

2966 Trp Arg Leu Val Ala Gly Gly Glu Asp Ala Ile Ser Glu Phe Pro Gln
 2967 5330 5335 5340
 2968 Asp Arg Gly Trp Asp Val Glu Gly Leu Tyr Asp Pro Asn Pro Glu Ala
 2969 5345 5350 5355 5360
 2970 Thr Gly Lys Ser Tyr Ala Arg Glu Ala Gly Phe Leu Tyr Glu Ala Gly
 2971 5365 5370 5375
 2972 Glu Phe Asp Ala Asp Phe Phe Gly Ile Ser Pro Arg Glu Ala Leu Ala
 2973 5380 5385 5390
 2974 Met Asp Pro Gln Gln Arg Leu Leu Leu Glu Ala Ser Trp Glu Ala Phe
 2975 5395 5400 5405
 2976 Glu His Ala Gly Ile Pro Ala Ala Thr Ala Arg Gly Thr Ser Val Gly
 2977 5410 5415 5420
 2978 Val Phe Thr Gly Val Met Tyr His Asp Tyr Ala Thr Arg Leu Thr Asp
 2979 5425 5430 5435 5440
 2980 Val Pro Glu Gly Ile Glu Gly Tyr Leu Gly Thr Gly Asn Ser Gly Ser
 2981 5445 5450 5455
 2982 Val Ala Ser Gly Arg Val Ala Tyr Thr Leu Gly Leu Glu Gly Pro Ala
 2983 5460 5465 5470
 2984 Val Thr Val Asp Thr Ala Cys Ser Ser Ser Leu Val Ala Leu His Leu
 2985 5475 5480 5485
 2986 Ala Val Gln Ala Leu Arg Lys Gly Glu Val Asp Met Ala Leu Ala Gly
 2987 5490 5495 5500
 2988 Gly Val Thr Val Met Ser Thr Pro Ser Thr Phe Val Glu Phe Ser Arg
 2989 5505 5510 5515 5520
 2990 Gln Arg Gly Leu Ala Pro Asp Gly Arg Ser Lys Ser Phe Ser Ser Thr
 2991 5525 5530 5535
 2992 Ala Asp Gly Thr Ser Trp Ser Glu Gly Val Gly Val Leu Leu Val Glu
 2993 5540 5545 5550
 2994 Arg Leu Ser Asp Ala Arg Arg Lys Gly His Arg Ile Leu Ala Val Val
 2995 5555 5560 5565
 2996 Arg Gly Thr Ala Val Asn Gln Asp Gly Ala Ser Ser Gly Leu Thr Ala
 2997 5570 5575 5580
 2998 Pro Asn Gly Pro Ser Gln Gln Arg Val Ile Arg Arg Ala Leu Ala Asp
 2999 5585 5590 5595 5600
 3000 Ala Arg Leu Thr Thr Ser Asp Val Asp Val Val Glu Ala His Gly Thr
 3001 5605 5610 5615
 3002 Gly Thr Arg Leu Gly Asp Pro Ile Glu Ala Gln Ala Val Ile Ala Thr
 3003 5620 5625 5630
 3004 Tyr Gly Gln Gly Arg Asp Gly Glu Gln Pro Leu Arg Leu Gly Ser Leu
 3005 5635 5640 5645
 3006 Lys Ser Asn Ile Gly His Thr Gln Ala Ala Ala Gly Val Ser Gly Val
 3007 5650 5655 5660
 3008 Ile Lys Met Val Gln Ala Met Arg His Gly Val Leu Pro Lys Thr Leu
 3009 5665 5670 5675 5680
 3010 His Val Glu Lys Pro Thr Asp Gln Val Asp Trp Ser Ala Gly Ala Val
 3011 5685 5690 5695
 3012 Glu Leu Leu Thr Glu Ala Met Asp Trp Pro Asp Lys Gly Asp Gly Gly
 3013 5700 5705 5710
 3014 Leu Arg Arg Ala Ala Val Ser Ser Phe Gly Val Ser Gly Thr Asn Ala

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
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Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

| | | | |
|------|---|------|------|
| 3015 | 5715 | 5720 | 5725 |
| 3016 | His Val Val Leu Glu Glu Ala Pro Ala Ala Glu Glu Thr Pro Ala Ser | | |
| 3017 | 5730 | 5735 | 5740 |
| 3018 | Glu Ala Thr Pro Ala Val Glu Pro Ser Val Gly Ala Gly Leu Val Pro | | |
| 3019 | 5745 | 5750 | 5755 |
| 3020 | Trp Leu Val Ser Ala Lys Thr Pro Ala Ala Leu Asp Ala Gln Ile Gly | | 5760 |
| 3021 | 5765 | 5770 | 5775 |
| 3022 | Arg Leu Ala Ala Phe Ala Ser Gln Gly Arg Thr Asp Ala Ala Asp Pro | | |
| 3023 | 5780 | 5785 | 5790 |
| 3024 | Gly Ala Val Ala Arg Val Leu Ala Gly Gly Arg Ala Glu Phe Glu His | | |
| 3025 | 5795 | 5800 | 5805 |
| 3026 | Arg Ala Val Val Leu Gly Thr Gly Gln Asp Asp Phe Ala Gln Ala Leu | | |
| 3027 | 5810 | 5815 | 5820 |
| 3028 | Thr Ala Pro Glu Gly Leu Ile Arg Gly Thr Pro Ser Asp Val Gly Arg | | |
| 3029 | 5825 | 5830 | 5835 |
| 3030 | Val Ala Phe Val Phe Pro Gly Gln Gly Thr Gln Trp Ala Gly Met Gly | | 5840 |
| 3031 | 5845 | 5850 | 5855 |
| 3032 | Ala Glu Leu Leu Asp Val Ser Lys Glu Phe Ala Ala Ala Met Ala Glu | | |
| 3033 | 5860 | 5865 | 5870 |
| 3034 | Cys Glu Ser Ala Leu Ser Arg Tyr Val Asp Trp Ser Leu Glu Ala Val | | |
| 3035 | 5875 | 5880 | 5885 |
| 3036 | Val Arg Gln Ala Pro Gly Ala Pro Thr Leu Glu Arg Val Asp Val Val | | |
| 3037 | 5890 | 5895 | 5900 |
| 3038 | Gln Pro Val Thr Phe Ala Val Met Val Ser Leu Ala Lys Val Trp Gln | | |
| 3039 | 5905 | 5910 | 5915 |
| 3040 | His His Gly Val Thr Pro Gln Ala Val Val Gly His Ser Gln Gly Glu | | |
| 3041 | 5925 | 5930 | 5935 |
| 3042 | Ile Ala Ala Ala Tyr Val Ala Gly Ala Leu Thr Leu Asp Asp Ala Ala | | |
| 3043 | 5940 | 5945 | 5950 |
| 3044 | Arg Val Val Thr Leu Arg Ser Lys Ser Ile Ala Ala His Leu Ala Gly | | |
| 3045 | 5955 | 5960 | 5965 |
| 3046 | Lys Gly Gly Met Ile Ser Leu Ala Leu Ser Glu Glu Ala Thr Arg Gln | | |
| 3047 | 5970 | 5975 | 5980 |
| 3048 | Arg Ile Glu Asn Leu His Gly Leu Ser Ile Ala Ala Val Asn Gly Pro | | |
| 3049 | 5985 | 5990 | 5995 |
| 3050 | Thr Ala Thr Val Val Ser Gly Asp Pro Thr Gln Ile Gln Glu Leu Ala | | 6000 |
| 3051 | 6005 | 6010 | 6015 |
| 3052 | Gln Ala Cys Glu Ala Asp Gly Val Arg Ala Arg Ile Ile Pro Val Asp | | |
| 3053 | 6020 | 6025 | 6030 |
| 3054 | Tyr Ala Ser His Ser Ala His Val Glu Thr Ile Glu Ser Glu Leu Ala | | |
| 3055 | 6035 | 6040 | 6045 |
| 3056 | Glu Val Leu Ala Gly Leu Ser Pro Arg Thr Pro Glu Val Pro Phe Phe | | |
| 3057 | 6050 | 6055 | 6060 |
| 3058 | Ser Thr Leu Glu Gly Ala Trp Ile Thr Glu Pro Val Leu Asp Gly Thr | | |
| 3059 | 6065 | 6070 | 6075 |
| 3060 | Tyr Trp Tyr Arg Asn Leu Arg His Arg Val Gly Phe Ala Pro Ala Val | | 6080 |
| 3061 | 6085 | 6090 | 6095 |
| 3062 | Glu Thr Leu Ala Thr Asp Glu Gly Phe Thr His Phe Ile Glu Val Ser | | |
| 3063 | 6100 | 6105 | 6110 |

RAW SEQUENCE LISTING
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Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

3064 Ala His Pro Val Leu Thr Met Thr Leu Pro Glu Thr Val Thr Gly Leu
 3065 6115 6120 6125
 3066 Gly Thr Leu Arg Arg Glu Gln Gly Gly Gln Glu Arg Leu Val Thr Ser
 3067 6130 6135 6140
 3068 Leu Ala Glu Ala Trp Thr Asn Gly Leu Thr Ile Asp Trp Ala Pro Val
 3069 6145 6150 6155 6160
 3070 Leu Pro Thr Ala Thr Gly His His Pro Glu Leu Pro Thr Tyr Ala Phe
 3071 6165 6170 6175
 3072 Gln Arg Arg His Tyr Trp Leu His Asp Ser Pro Ala Val Gln Gly Ser
 3073 6180 6185 6190
 3074 Val Gln Asp Ser Trp Arg Tyr Arg Ile Asp Trp Lys Arg Leu Ala Val
 3075 6195 6200 6205
 3076 Ala Asp Ala Ser Glu Arg Ala Gly Leu Ser Gly Arg Trp Leu Val Val
 3077 6210 6215 6220
 3078 Val Pro Glu Asp Arg Ser Ala Glu Ala Ala Pro Val Leu Ala Ala Leu
 3079 6225 6230 6235 6240
 3080 Ser Gly Ala Gly Ala Asp Pro Val Gln Leu Asp Val Ser Pro Leu Gly
 3081 6245 6250 6255
 3082 Asp Arg Gln Arg Leu Ala Ala Thr Leu Gly Glu Ala Leu Ala Ala Ala
 3083 6260 6265 6270
 3084 Gly Gly Ala Val Asp Gly Val Leu Ser Leu Leu Ala Trp Asp Glu Ser
 3085 6275 6280 6285
 3086 Ala His Pro Gly His Pro Ala Pro Phe Thr Arg Gly Thr Gly Ala Thr
 3087 6290 6295 6300
 3088 Leu Thr Leu Val Gln Ala Leu Glu Asp Ala Gly Val Ala Ala Pro Leu
 3089 6305 6310 6315 6320
 3090 Trp Cys Val Thr His Gly Ala Val Ser Val Gly Arg Ala Asp His Val
 3091 6325 6330 6335
 3092 Thr Ser Pro Ala Gln Ala Met Val Trp Gly Met Gly Arg Val Ala Ala
 3093 6340 6345 6350
 3094 Leu Glu His Pro Glu Arg Trp Gly Gly Leu Ile Asp Leu Pro Ser Asp
 3095 6355 6360 6365
 3096 Ala Asp Arg Ala Ala Leu Asp Arg Met Thr Thr Val Leu Ala Gly Gly
 3097 6370 6375 6380
 3098 Thr Gly Glu Asp Gln Val Ala Val Arg Ala Ser Gly Leu Leu Ala Arg
 3099 6385 6390 6395 6400
 3100 Arg Leu Val Arg Ala Ser Leu Pro Ala His Gly Thr Ala Ser Pro Trp
 3101 6405 6410 6415
 3102 Trp Gln Ala Asp Gly Thr Val Leu Val Thr Gly Ala Glu Glu Pro Ala
 3103 6420 6425 6430
 3104 Ala Ala Glu Ala Ala Arg Arg Leu Ala Arg Asp Gly Ala Gly His Leu
 3105 6435 6440 6445
 3106 Leu Leu His Thr Thr Pro Ser Gly Ser Glu Gly Ala Glu Gly Thr Ser
 3107 6450 6455 6460
 3108 Gly Ala Ala Glu Asp Ser Gly Leu Ala Gly Leu Val Ala Glu Leu Ala
 3109 6465 6470 6475 6480
 3110 Asp Leu Gly Ala Thr Ala Thr Val Val Thr Cys Asp Leu Thr Asp Ala
 3111 6485 6490 6495
 3112 Glu Ala Ala Ala Arg Leu Leu Ala Gly Val Ser Asp Ala His Pro Leu

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

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Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

| | | | | |
|------|---|------|------|------|
| 3113 | 6500 | 6505 | 6510 | |
| 3114 | Ser Ala Val Leu His Leu Pro Pro Thr Val Asp Ser Glu Pro Leu Ala | | | |
| 3115 | 6515 | 6520 | 6525 | |
| 3116 | Ala Thr Asp Ala Asp Ala Leu Ala Arg Val Val Thr Ala Lys Ala Thr | | | |
| 3117 | 6530 | 6535 | 6540 | |
| 3118 | Ala Ala Leu His Leu Asp Arg Leu Leu Arg Glu Ala Ala Ala Gly | | | |
| 3119 | 6545 | 6550 | 6555 | 6560 |
| 3120 | Gly Arg Pro Pro Val Leu Val Leu Phe Ser Ser Val Ala Ala Ile Trp | | | |
| 3121 | 6565 | 6570 | 6575 | |
| 3122 | Gly Gly Ala Gly Gln Gly Ala Tyr Ala Ala Gly Thr Ala Phe Leu Asp | | | |
| 3123 | 6580 | 6585 | 6590 | |
| 3124 | Ala Leu Ala Gly Gln His Arg Ala Asp Gly Pro Thr Val Thr Ser Val | | | |
| 3125 | 6595 | 6600 | 6605 | |
| 3126 | Ala Trp Ser Pro Trp Glu Gly Ser Arg Val Thr Glu Gly Ala Thr Gly | | | |
| 3127 | 6610 | 6615 | 6620 | |
| 3128 | Glu Arg Leu Arg Arg Leu Gly Leu Arg Pro Leu Ala Pro Ala Thr Ala | | | |
| 3129 | 6625 | 6630 | 6635 | 6640 |
| 3130 | Leu Thr Ala Leu Asp Thr Ala Leu Gly His Gly Asp Thr Ala Val Thr | | | |
| 3131 | 6645 | 6650 | 6655 | |
| 3132 | Ile Ala Asp Val Asp Trp Ser Ser Phe Ala Pro Gly Phe Thr Thr Ala | | | |
| 3133 | 6660 | 6665 | 6670 | |
| 3134 | Arg Pro Gly Thr Leu Leu Ala Asp Leu Pro Glu Ala Arg Arg Ala Leu | | | |
| 3135 | 6675 | 6680 | 6685 | |
| 3136 | Asp Glu Gln Gln Ser Thr Thr Ala Ala Asp Asp Thr Val Leu Ser Arg | | | |
| 3137 | 6690 | 6695 | 6700 | |
| 3138 | Glu Leu Gly Ala Leu Thr Gly Ala Glu Gln Gln Arg Arg Met Gln Glu | | | |
| 3139 | 6705 | 6710 | 6715 | 6720 |
| 3140 | Leu Val Arg Glu His Leu Ala Val Val Leu Asn His Pro Ser Pro Glu | | | |
| 3141 | 6725 | 6730 | 6735 | |
| 3142 | Ala Val Asp Thr Gly Arg Ala Phe Arg Asp Leu Gly Phe Asp Ser Leu | | | |
| 3143 | 6740 | 6745 | 6750 | |
| 3144 | Thr Ala Val Glu Leu Arg Asn Arg Leu Lys Asn Ala Thr Gly Leu Ala | | | |
| 3145 | 6755 | 6760 | 6765 | |
| 3146 | Leu Pro Ala Thr Leu Val Phe Asp Tyr Pro Thr Pro Arg Thr Leu Ala | | | |
| 3147 | 6770 | 6775 | 6780 | |
| 3148 | Glu Phe Leu Leu Ala Glu Ile Leu Gly Glu Gln Ala Gly Ala Gly Glu | | | |
| 3149 | 6785 | 6790 | 6795 | 6800 |
| 3150 | Gln Leu Pro Val Asp Gly Gly Val Asp Asp Glu Pro Val Ala Ile Val | | | |
| 3151 | 6805 | 6810 | 6815 | |
| 3152 | Gly Met Ala Cys Arg Leu Pro Gly Gly Val Ala Ser Pro Glu Asp Leu | | | |
| 3153 | 6820 | 6825 | 6830 | |
| 3154 | Trp Arg Leu Val Ala Gly Gly Glu Asp Ala Ile Ser Gly Phe Pro Gln | | | |
| 3155 | 6835 | 6840 | 6845 | |
| 3156 | Asp Arg Gly Trp Asp Val Glu Gly Leu Tyr Asp Pro Asp Pro Asp Ala | | | |
| 3157 | 6850 | 6855 | 6860 | |
| 3158 | Ser Gly Arg Thr Tyr Cys Arg Ala Gly Gly Phe Leu Asp Glu Ala Gly | | | |
| 3159 | 6865 | 6870 | 6875 | 6880 |
| 3160 | Glu Phe Asp Ala Asp Phe Phe Gly Ile Ser Pro Arg Glu Ala Leu Ala | | | |
| 3161 | 6885 | 6890 | 6895 | |

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Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

3162 Met Asp Pro Gln Gln Arg Leu Leu Leu Glu Thr Ser Trp Glu Ala Val
 3163 6900 6905 6910
 3164 Glu Asp Ala Gly Ile Asp Pro Thr Ser Leu Gln Gly Gln Gln Val Gly
 3165 6915 6920 6925
 3166 Val Phe Ala Gly Thr Asn Gly Pro His Tyr Glu Pro Leu Leu Arg Asn
 3167 6930 6935 6940
 3168 Thr Ala Glu Asp Leu Glu Gly Tyr Val Gly Thr Gly Asn Ala Ala Ser
 3169 6945 6950 6955 6960
 3170 Ile Met Ser Gly Arg Val Ser Tyr Thr Leu Gly Leu Glu Gly Pro Ala
 3171 6965 6970 6975
 3172 Val Thr Val Asp Thr Ala Cys Ser Ser Leu Val Ala Leu His Leu
 3173 6980 6985 6990
 3174 Ala Val Gln Ala Leu Arg Lys Gly Glu Cys Gly Leu Ala Leu Ala Gly
 3175 6995 7000 7005
 3176 Gly Val Thr Val Met Ser Thr Pro Thr Thr Phe Val Glu Phe Ser Arg
 3177 7010 7015 7020
 3178 Gln Arg Gly Leu Ala Glu Asp Gly Arg Ser Lys Ala Phe Ala Ala Ser
 3179 7025 7030 7035 7040
 3180 Ala Asp Gly Phe Gly Pro Ala Glu Gly Val Gly Met Leu Leu Val Glu
 3181 7045 7050 7055
 3182 Arg Leu Ser Asp Ala Arg Arg Asn Gly His Arg Val Leu Ala Val Val
 3183 7060 7065 7070
 3184 Arg Gly Ser Ala Val Asn Gln Asp Gly Ala Ser Asn Gly Leu Thr Ala
 3185 7075 7080 7085
 3186 Pro Asn Gly Pro Ser Gln Gln Arg Val Ile Arg Arg Ala Leu Ala Asp
 3187 7090 7095 7100
 3188 Ala Arg Leu Thr Thr Ala Asp Val Asp Val Val Glu Ala His Gly Thr
 3189 7105 7110 7115 7120
 3190 Gly Thr Arg Leu Gly Asp Pro Ile Glu Ala Gln Ala Leu Ile Ala Thr
 3191 7125 7130 7135
 3192 Tyr Gly Gln Gly Arg Asp Thr Glu Gln Pro Leu Arg Leu Gly Ser Leu
 3193 7140 7145 7150
 3194 Lys Ser Asn Ile Gly His Thr Gln Ala Ala Ala Gly Val Ser Gly Ile
 3195 7155 7160 7165
 3196 Ile Lys Met Val Gln Ala Met Arg His Gly Val Leu Pro Lys Thr Leu
 3197 7170 7175 7180
 3198 His Val Asp Arg Pro Ser Asp Gln Ile Asp Trp Ser Ala Gly Thr Val
 3199 7185 7190 7195 7200
 3200 Glu Leu Leu Thr Glu Ala Met Asp Trp Pro Arg Lys Gln Glu Gly Gly
 3201 7205 7210 7215
 3202 Leu Arg Arg Ala Ala Val Ser Ser Phe Gly Ile Ser Gly Thr Asn Ala
 3203 7220 7225 7230
 3204 His Ile Val Leu Glu Glu Ala Pro Val Asp Glu Asp Ala Pro Ala Asp
 3205 7235 7240 7245
 3206 Glu Pro Ser Val Gly Gly Val Val Pro Trp Leu Val Ser Ala Lys Thr
 3207 7250 7255 7260
 3208 Pro Ala Ala Leu Asp Ala Gln Ile Gly Arg Leu Ala Ala Phe Ala Ser
 3209 7265 7270 7275 7280
 3210 Gln Gly Arg Thr Asp Ala Ala Asp Pro Gly Ala Val Ala Arg Val Leu

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
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Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

| | | | |
|------|---|------|------|
| 3211 | 7285 | 7290 | 7295 |
| 3212 | Ala Gly Gly Arg Ala Gln Phe Glu His Arg Ala Val Ala Leu Gly Thr | | |
| 3213 | 7300 | 7305 | 7310 |
| 3214 | Gly Gln Asp Asp Leu Ala Ala Leu Ala Ala Pro Glu Gly Leu Val | | |
| 3215 | 7315 | 7320 | 7325 |
| 3216 | Arg Gly Val Ala Ser Gly Val Gly Arg Val Ala Phe Val Phe Pro Gly | | |
| 3217 | 7330 | 7335 | 7340 |
| 3218 | Gln Gly Thr Gln Trp Ala Gly Met Gly Ala Glu Leu Leu Asp Val Ser | | |
| 3219 | 7345 | 7350 | 7355 |
| 3220 | Lys Glu Phe Ala Ala Ala Met Ala Glu Cys Glu Ala Ala Leu Ala Pro | | |
| 3221 | 7365 | 7370 | 7375 |
| 3222 | Tyr Val Asp Trp Ser Leu Glu Ala Val Val Arg Gln Ala Pro Gly Ala | | |
| 3223 | 7380 | 7385 | 7390 |
| 3224 | Pro Thr Leu Glu Arg Val Asp Val Val Gln Pro Val Thr Phe Ala Val | | |
| 3225 | 7395 | 7400 | 7405 |
| 3226 | Met Val Ser Leu Ala Lys Val Trp Gln His His Gly Val Thr Pro Gln | | |
| 3227 | 7410 | 7415 | 7420 |
| 3228 | Ala Val Val Gly His Ser Gln Gly Glu Ile Ala Ala Ala Tyr Val Ala | | |
| 3229 | 7425 | 7430 | 7435 |
| 3230 | Gly Ala Leu Ser Leu Asp Asp Ala Ala Arg Val Val Thr Leu Arg Ser | | |
| 3231 | 7445 | 7450 | 7455 |
| 3232 | Lys Ser Ile Gly Ala His Leu Ala Gly Gln Gly Gly Met Leu Ser Leu | | |
| 3233 | 7460 | 7465 | 7470 |
| 3234 | Ala Leu Ser Glu Ala Ala Val Val Glu Arg Leu Ala Gly Phe Asp Gly | | |
| 3235 | 7475 | 7480 | 7485 |
| 3236 | Leu Ser Val Ala Ala Val Asn Gly Pro Thr Ala Thr Val Val Ser Gly | | |
| 3237 | 7490 | 7495 | 7500 |
| 3238 | Asp Pro Thr Gln Ile Gln Glu Leu Ala Gln Ala Cys Glu Ala Asp Gly | | |
| 3239 | 7505 | 7510 | 7515 |
| 3240 | Val Arg Ala Arg Ile Ile Pro Val Asp Tyr Ala Ser His Ser Ala His | | |
| 3241 | 7525 | 7530 | 7535 |
| 3242 | Val Glu Thr Ile Glu Ser Glu Leu Ala Asp Val Leu Ala Gly Leu Ser | | |
| 3243 | 7540 | 7545 | 7550 |
| 3244 | Pro Gln Thr Pro Gln Val Pro Phe Phe Ser Thr Leu Glu Gly Ala Trp | | |
| 3245 | 7555 | 7560 | 7565 |
| 3246 | Ile Thr Glu Pro Ala Leu Asp Gly Gly Tyr Trp Tyr Arg Asn Leu Arg | | |
| 3247 | 7570 | 7575 | 7580 |
| 3248 | His Arg Val Gly Phe Ala Pro Ala Val Glu Thr Leu Ala Thr Asp Glu | | |
| 3249 | 7585 | 7590 | 7595 |
| 3250 | Gly Phe Thr His Phe Val Glu Val Ser Ala His Pro Val Leu Thr Met | | |
| 3251 | 7605 | 7610 | 7615 |
| 3252 | Ala Leu Pro Glu Thr Val Thr Gly Leu Gly Thr Leu Arg Arg Asp Asn | | |
| 3253 | 7620 | 7625 | 7630 |
| 3254 | Gly Gly Gln His Arg Leu Thr Thr Ser Leu Ala Glu Ala Trp Ala Asn | | |
| 3255 | 7635 | 7640 | 7645 |
| 3256 | Gly Leu Thr Val Asp Trp Ala Ser Leu Leu Pro Thr Thr Thr His | | |
| 3257 | 7650 | 7655 | 7660 |
| 3258 | Pro Asp Leu Pro Thr Tyr Ala Phe Gln Thr Glu Arg Tyr Trp Pro Gln | | |
| 3259 | 7665 | 7670 | 7675 |
| | | | 7680 |

RAW SEQUENCE LISTING
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Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

3260 Pro Asp Leu Ser Ala Ala Gly Asp Ile Thr Ser Ala Gly Leu Gly Ala
 3261 7685 7690 7695
 3262 Ala Glu His Pro Leu Leu Gly Ala Ala Val Ala Leu Ala Asp Ser Asp
 3263 7700 7705 7710
 3264 Gly Cys Leu Leu Thr Gly Ser Leu Ser Leu Arg Thr His Pro Trp Leu
 3265 7715 7720 7725
 3266 Ala Asp His Ala Val Ala Gly Thr Val Leu Leu Pro Gly Thr Ala Phe
 3267 7730 7735 7740
 3268 Val Glu Leu Ala Phe Arg Ala Gly Asp Gln Val Gly Cys Asp Leu Val
 3269 7745 7750 7755 7760
 3270 Glu Glu Leu Thr Leu Asp Ala Pro Leu Val Leu Pro Arg Arg Gly Ala
 3271 7765 7770 7775
 3272 Val Arg Val Gln Leu Ser Val Gly Ala Ser Asp Glu Ser Gly Arg Arg
 3273 7780 7785 7790
 3274 Thr Phe Gly Leu Tyr Ala His Pro Glu Asp Ala Pro Gly Glu Ala Glu
 3275 7795 7800 7805
 3276 Trp Thr Arg His Ala Thr Gly Val Leu Ala Ala Arg Ala Asp Arg Thr
 3277 7810 7815 7820
 3278 Ala Pro Val Ala Asp Pro Glu Ala Trp Pro Pro Gly Ala Glu Pro
 3279 7825 7830 7835 7840
 3280 Val Asp Val Asp Gly Leu Tyr Glu Arg Phe Ala Ala Asn Gly Tyr Gly
 3281 7845 7850 7855
 3282 Tyr Gly Pro Leu Phe Gln Gly Val Arg Gly Val Trp Arg Arg Gly Asp
 3283 7860 7865 7870
 3284 Glu Val Phe Ala Asp Val Ala Leu Pro Ala Glu Val Ala Gly Ala Glu
 3285 7875 7880 7885
 3286 Gly Ala Arg Phe Gly Leu His Pro Ala Leu Leu Asp Ala Ala Val Gln
 3287 7890 7895 7900
 3288 Ala Ala Gly Ala Gly Arg Gly Val Arg Arg Gly His Ala Ala Ala Val
 3289 7905 7910 7915 7920
 3290 Arg Leu Glu Arg Asp Leu Leu Tyr Ala Val Gly Ala Thr Ala Leu Arg
 3291 7925 7930 7935
 3292 Val Arg Leu Ala Pro Ala Gly Pro Asp Thr Val Ser Val Ser Ala Ala
 3293 7940 7945 7950
 3294 Asp Ser Ser Gly Gln Pro Val Phe Ala Ala Asp Ser Leu Thr Val Leu
 3295 7955 7960 7965
 3296 Pro Val Asp Pro Ala Gln Leu Ala Ala Phe Ser Asp Pro Thr Leu Asp
 3297 7970 7975 7980
 3298 Ala Leu His Leu Leu Glu Trp Thr Ala Trp Asp Gly Ala Ala Gln Ala
 3299 7985 7990 7995 8000
 3300 Leu Pro Gly Ala Val Val Leu Gly Gly Asp Ala Asp Gly Leu Ala Ala
 3301 8005 8010 8015
 3302 Ala Leu Arg Ala Gly Gly Thr Glu Val Leu Ser Phe Pro Asp Leu Thr
 3303 8020 8025 8030
 3304 Asp Leu Val Glu Ala Val Asp Arg Gly Glu Thr Pro Ala Pro Ala Thr
 3305 8035 8040 8045
 3306 Val Leu Val Ala Cys Pro Ala Ala Gly Pro Asp Gly Pro Glu His Val
 3307 8050 8055 8060
 3308 Arg Glu Ala Leu His Gly Ser Leu Ala Leu Met Gln Ala Trp Leu Ala

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:28

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

| | | | | |
|------|---|------|------|------|
| 3309 | 8065 | 8070 | 8075 | 8080 |
| 3310 | Asp Glu Arg Phe Thr Asp Gly Arg Leu Val Leu Val Thr Arg Asp Ala | | | |
| 3311 | 8085 | 8090 | 8095 | |
| 3312 | Val Ala Ala Arg Ser Gly Asp Gly Leu Arg Ser Thr Gly Gln Ala Ala | | | |
| 3313 | 8100 | 8105 | 8110 | |
| 3314 | Val Trp Gly Leu Gly Arg Ser Ala Gln Thr Glu Ser Pro Gly Arg Phe | | | |
| 3315 | 8115 | 8120 | 8125 | |
| 3316 | Val Leu Leu Asp Leu Ala Gly Glu Ala Arg Thr Ala Gly Asp Ala Thr | | | |
| 3317 | 8130 | 8135 | 8140 | |
| 3318 | Ala Gly Asp Gly Leu Thr Thr Gly Asp Ala Thr Val Gly Gly Thr Ser | | | |
| 3319 | 8145 | 8150 | 8155 | 8160 |
| 3320 | Gly Asp Ala Ala Leu Gly Ser Ala Leu Ala Thr Ala Leu Gly Ser Gly | | | |
| 3321 | 8165 | 8170 | 8175 | |
| 3322 | Glu Pro Gln Leu Ala Leu Arg Asp Gly Ala Leu Leu Val Pro Arg Leu | | | |
| 3323 | 8180 | 8185 | 8190 | |
| 3324 | Ala Arg Ala Ala Ala Pro Ala Ala Asp Gly Leu Ala Ala Ala Asp | | | |
| 3325 | 8195 | 8200 | 8205 | |
| 3326 | Gly Leu Ala Ala Leu Pro Leu Pro Ala Ala Pro Ala Leu Trp Arg Leu | | | |
| 3327 | 8210 | 8215 | 8220 | |
| 3328 | Glu Pro Gly Thr Asp Gly Ser Leu Glu Ser Leu Thr Ala Ala Pro Gly | | | |
| 3329 | 8225 | 8230 | 8235 | 8240 |
| 3330 | Asp Ala Glu Thr Leu Ala Pro Glu Pro Leu Gly Pro Gly Gln Val Arg | | | |
| 3331 | 8245 | 8250 | 8255 | |
| 3332 | Ile Ala Ile Arg Ala Thr Gly Leu Asn Phe Arg Asp Val Leu Ile Ala | | | |
| 3333 | 8260 | 8265 | 8270 | |
| 3334 | Leu Gly Met Tyr Pro Asp Pro Ala Leu Met Gly Thr Glu Gly Ala Gly | | | |
| 3335 | 8275 | 8280 | 8285 | |
| 3336 | Val Val Thr Ala Thr Gly Pro Gly Val Thr His Leu Ala Pro Gly Asp | | | |
| 3337 | 8290 | 8295 | 8300 | |
| 3338 | Arg Val Met Gly Leu Leu Ser Gly Ala Tyr Ala Pro Val Val Val Ala | | | |
| 3339 | 8305 | 8310 | 8315 | 8320 |
| 3340 | Asp Ala Arg Thr Val Ala Arg Met Pro Glu Gly Trp Thr Phe Ala Gln | | | |
| 3341 | 8325 | 8330 | 8335 | |
| 3342 | Gly Ala Ser Val Pro Val Val Phe Leu Thr Ala Val Tyr Ala Leu Arg | | | |
| 3343 | 8340 | 8345 | 8350 | |
| 3344 | Asp Leu Ala Asp Val Lys Pro Gly Glu Arg Leu Leu Val His Ser Ala | | | |
| 3345 | 8355 | 8360 | 8365 | |
| 3346 | Ala Gly Gly Val Gly Met Ala Ala Val Gln Leu Ala Arg His Trp Gly | | | |
| 3347 | 8370 | 8375 | 8380 | |
| 3348 | Val Glu Val His Gly Thr Ala Ser His Gly Lys Trp Asp Ala Leu Arg | | | |
| 3349 | 8385 | 8390 | 8395 | 8400 |
| 3350 | Ala Leu Gly Leu Asp Asp Ala His Ile Ala Ser Ser Arg Thr Leu Asp | | | |
| 3351 | 8405 | 8410 | 8415 | |
| 3352 | Phe Glu Ser Ala Phe Arg Ala Ala Ser Gly Gly Ala Gly Met Asp Val | | | |
| 3353 | 8420 | 8425 | 8430 | |
| 3354 | Val Leu Asn Ser Leu Ala Arg Glu Phe Val Asp Ala Ser Leu Arg Leu | | | |
| 3355 | 8435 | 8440 | 8445 | |
| 3356 | Leu Gly Pro Gly Gly Arg Phe Val Glu Met Gly Lys Thr Asp Val Arg | | | |
| 3357 | 8450 | 8455 | 8460 | |

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Input Set : A:\Sequence Listing.txt
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3358 Asp Ala Glu Arg Val Ala Ala Asp His Pro Gly Val Gly Tyr Arg Ala
 3359 8465 8470 8475 8480
 3360 Phe Asp Leu Gly Glu Ala Gly Pro Glu Arg Ile Gly Glu Met Leu Ala
 3361 8485 8490 8495
 3362 Glu Val Ile Ala Leu Phe Glu Asp Gly Val Leu Arg His Leu Pro Val
 3363 8500 8505 8510
 3364 Thr Thr Trp Asp Val Arg Arg Ala Arg Asp Ala Phe Arg His Val Ser
 3365 8515 8520 8525
 3366 Gln Ala Arg His Thr Gly Lys Val Val Leu Thr Met Pro Ser Gly Leu
 3367 8530 8535 8540
 3368 Asp Pro Glu Gly Thr Val Leu Leu Thr Gly Gly Thr Gly Ala Leu Gly
 3369 8545 8550 8555 8560
 3370 Gly Ile Val Ala Arg His Val Val Gly Glu Trp Gly Val Arg Arg Leu
 3371 8565 8570 8575
 3372 Leu Leu Val Ser Arg Arg Gly Thr Asp Ala Pro Gly Ala Gly Glu Leu
 3373 8580 8585 8590
 3374 Val His Glu Leu Glu Ala Leu Gly Ala Asp Val Ser Val Ala Ala Cys
 3375 8595 8600 8605
 3376 Asp Val Ala Asp Arg Glu Ala Leu Thr Ala Val Leu Asp Ser Ile Pro
 3377 8610 8615 8620
 3378 Ala Glu His Pro Leu Thr Ala Val Val His Thr Ala Gly Val Leu Ser
 3379 8625 8630 8635 8640
 3380 Asp Gly Thr Leu Pro Ser Met Thr Ala Glu Asp Val Glu His Val Leu
 3381 8645 8650 8655
 3382 Arg Pro Lys Val Asp Ala Ala Phe Leu Leu Asp Glu Leu Thr Ser Thr
 3383 8660 8665 8670
 3384 Pro Gly Tyr Asp Leu Ala Ala Phe Val Met Phe Ser Ser Ala Ala Ala
 3385 8675 8680 8685
 3386 Val Phe Gly Gly Ala Gly Gln Gly Ala Tyr Ala Ala Ala Asn Ala Thr
 3387 8690 8695 8700
 3388 Leu Asp Ala Leu Ala Trp Arg Arg Arg Thr Ala Gly Leu Pro Ala Leu
 3389 8705 8710 8715 8720
 3390 Ser Leu Gly Trp Gly Leu Trp Ala Glu Thr Ser Gly Met Thr Gly Gly
 3391 8725 8730 8735
 3392 Leu Ser Asp Thr Asp Arg Ser Arg Leu Ala Arg Ser Gly Ala Thr Pro
 3393 8740 8745 8750
 3394 Met Asp Ser Glu Leu Thr Leu Ser Leu Leu Asp Ala Ala Met Arg Arg
 3395 8755 8760 8765
 3396 Asp Asp Pro Ala Leu Val Pro Ile Ala Leu Asp Val Ala Ala Leu Arg
 3397 8770 8775 8780
 3398 Ala Gln Gln Arg Asp Gly Met Leu Ala Pro Leu Leu Ser Gly Leu Thr
 3399 8785 8790 8795 8800
 3400 Arg Gly Ser Arg Val Gly Gly Ala Pro Val Asn Gln Arg Arg Ala Ala
 3401 8805 8810 8815
 3402 Ala Gly Gly Ala Gly Glu Ala Asp Thr Asp Leu Gly Gly Arg Leu Ala
 3403 8820 8825 8830
 3404 Ala Met Thr Pro Asp Asp Arg Val Ala His Leu Arg Asp Leu Val Arg
 3405 8835 8840 8845
 3406 Thr His Val Ala Thr Val Leu Gly His Gly Thr Pro Ser Arg Val Asp

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Input Set : A:\Sequence Listing.txt
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| | | | |
|------|---|------|------|
| 3407 | 8850 | 8855 | 8860 |
| 3408 | Leu Glu Arg Ala Phe Arg Asp Thr Gly Phe Asp Ser Leu Thr Ala Val | | |
| 3409 | 8865 | 8870 | 8875 |
| 3410 | Glu Leu Arg Asn Arg Leu Asn Ala Ala Thr Gly Leu Arg Leu Pro Ala | | 8880 |
| 3411 | 8885 | 8890 | 8895 |
| 3412 | Thr Leu Val Phe Asp His Pro Thr Pro Gly Glu Leu Ala Gly His Leu | | |
| 3413 | 8900 | 8905 | 8910 |
| 3414 | Leu Asp Glu Leu Ala Thr Ala Ala Gly Gly Ser Trp Ala Glu Gly Thr | | |
| 3415 | 8915 | 8920 | 8925 |
| 3416 | Gly Ser Gly Asp Thr Ala Ser Ala Thr Asp Arg Gln Thr Thr Ala Ala | | |
| 3417 | 8930 | 8935 | 8940 |
| 3418 | Leu Ala Glu Leu Asp Arg Leu Glu Gly Val Leu Ala Ser Leu Ala Pro | | |
| 3419 | 8945 | 8950 | 8955 |
| 3420 | Ala Ala Gly Gly Arg Pro Glu Leu Ala Ala Arg Leu Arg Ala Leu Ala | | 8960 |
| 3421 | 8965 | 8970 | 8975 |
| 3422 | Ala Ala Leu Gly Asp Asp Gly Asp Asp Ala Thr Asp Leu Asp Glu Ala | | |
| 3423 | 8980 | 8985 | 8990 |
| 3424 | Ser Asp Asp Asp Leu Phe Ser Phe Ile Asp Lys Glu Leu Gly Asp Ser | | |
| 3425 | 8995 | 9000 | 9005 |
| 3426 | Asp Phe Met Ala Asn Asn Glu Asp Lys Leu Arg Asp Tyr Leu Lys Arg | | |
| 3427 | 9010 | 9015 | 9020 |
| 3428 | Val Thr Ala Glu Leu Gln Gln Asn Thr Arg Arg Leu Arg Glu Ile Glu | | |
| 3429 | 9025 | 9030 | 9035 |
| 3430 | Gly Arg Thr His Glu Pro Val Ala Ile Val Gly Met Ala Cys Arg Leu | | |
| 3431 | 9045 | 9050 | 9055 |
| 3432 | Pro Gly Gly Val Ala Ser Pro Glu Asp Leu Trp Gln Leu Val Ala Gly | | |
| 3433 | 9060 | 9065 | 9070 |
| 3434 | Asp Gly Asp Ala Ile Ser Glu Phe Pro Gln Asp Arg Gly Trp Asp Val | | |
| 3435 | 9075 | 9080 | 9085 |
| 3436 | Glu Gly Leu Tyr Asp Pro Asp Pro Asp Ala Ser Gly Arg Thr Tyr Cys | | |
| 3437 | 9090 | 9095 | 9100 |
| 3438 | Arg Ser Gly Gly Phe Leu His Asp Ala Gly Glu Phe Asp Ala Asp Phe | | |
| 3439 | 9105 | 9110 | 9115 |
| 3440 | Phe Gly Ile Ser Pro Arg Glu Ala Leu Ala Met Asp Pro Gln Gln Arg | | 9120 |
| 3441 | 9125 | 9130 | 9135 |
| 3442 | Leu Ser Leu Thr Thr Ala Trp Glu Ala Ile Glu Ser Ala Gly Ile Asp | | |
| 3443 | 9140 | 9145 | 9150 |
| 3444 | Pro Thr Ala Leu Lys Gly Ser Gly Leu Gly Val Phe Val Gly Gly Trp | | |
| 3445 | 9155 | 9160 | 9165 |
| 3446 | His Thr Gly Tyr Thr Ser Gly Gln Thr Thr Ala Val Gln Ser Pro Glu | | |
| 3447 | 9170 | 9175 | 9180 |
| 3448 | Leu Glu Gly His Leu Val Ser Gly Ala Ala Leu Gly Phe Leu Ser Gly | | |
| 3449 | 9185 | 9190 | 9195 |
| 3450 | Arg Ile Ala Tyr Val Leu Gly Thr Asp Gly Pro Ala Leu Thr Val Asp | | 9200 |
| 3451 | 9205 | 9210 | 9215 |
| 3452 | Thr Ala Cys Ser Ser Ser Leu Val Ala Leu His Leu Ala Val Gln Ala | | |
| 3453 | 9220 | 9225 | 9230 |
| 3454 | Leu Arg Lys Gly Glu Cys Asp Met Ala Leu Ala Gly Gly Val Thr Val | | |
| 3455 | 9235 | 9240 | 9245 |

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Input Set : A:\Sequence Listing.txt
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3456 Met Pro Asn Ala Asp Leu Phe Val Gln Phe Ser Arg Gln Arg Gly Leu
3457 9250 9255 9260
3458 Ala Ala Asp Gly Arg Ser Lys Ala Phe Ala Thr Ser Ala Asp Gly Phe
3459 9265 9270 9275 9280
3460 Gly Pro Ala Glu Gly Ala Gly Val Leu Leu Val Glu Arg Leu Ser Asp
3461 9285 9290 9295
3462 Ala Arg Arg Asn Gly His Arg Ile Leu Ala Val Val Arg Gly Ser Ala
3463 9300 9305 9310
3464 Val Asn Gln Asp Gly Ala Ser Asn Gly Leu Thr Ala Pro His Gly Pro
3465 9315 9320 9325
3466 Ser Gln Gln Arg Val Ile Arg Arg Ala Leu Ala Asp Ala Arg Leu Ala
3467 9330 9335 9340
3468 Pro Gly Asp Val Asp Val Val Glu Ala His Gly Thr Gly Thr Arg Leu
3469 9345 9350 9355 9360
3470 Gly Asp Pro Ile Glu Ala Gln Ala Leu Ile Ala Thr Tyr Gly Gln Glu
3471 9365 9370 9375
3472 Lys Ser Ser Glu Gln Pro Leu Arg Leu Gly Ala Leu Lys Ser Asn Ile
3473 9380 9385 9390
3474 Gly His Thr Gln Ala Ala Ala Gly Val Ala Gly Val Ile Lys Met Val
3475 9395 9400 9405
3476 Gln Ala Met Arg His Gly Leu Leu Pro Lys Thr Leu His Val Asp Glu
3477 9410 9415 9420
3478 Pro Ser Asp Gln Ile Asp Trp Ser Ala Gly Thr Val Glu Leu Leu Thr
3479 9425 9430 9435 9440
3480 Glu Ala Val Asp Trp Pro Glu Lys Gln Asp Gly Gly Leu Arg Arg Ala
3481 9445 9450 9455
3482 Ala Val Ser Ser Phe Gly Ile Ser Gly Thr Asn Ala His Val Val Leu
3483 9460 9465 9470
3484 Glu Glu Ala Pro Ala Val Glu Asp Ser Pro Ala Val Glu Pro Pro Ala
3485 9475 9480 9485
3486 Gly Gly Gly Val Val Pro Trp Pro Val Ser Ala Lys Thr Pro Ala Ala
3487 9490 9495 9500
3488 Leu Asp Ala Gln Ile Gly Gln Leu Ala Ala Tyr Ala Asp Gly Arg Thr
3489 9505 9510 9515 9520
3490 Asp Val Asp Pro Ala Val Ala Ala Arg Ala Leu Val Asp Ser Arg Thr
3491 9525 9530 9535
3492 Ala Met Glu His Arg Ala Val Ala Val Gly Asp Ser Arg Glu Ala Leu
3493 9540 9545 9550
3494 Arg Asp Ala Leu Arg Met Pro Glu Gly Leu Val Arg Gly Thr Ser Ser
3495 9555 9560 9565
3496 Asp Val Gly Arg Val Ala Phe Val Phe Pro Gly Gln Gly Thr Gln Trp
3497 9570 9575 9580
3498 Ala Gly Met Gly Ala Glu Leu Leu Asp Ser Ser Pro Glu Phe Ala Ala
3499 9585 9590 9595 9600
3500 Ser Met Ala Glu Cys Glu Thr Ala Leu Ser Arg Tyr Val Asp Trp Ser
3501 9605 9610 9615
3502 Leu Glu Ala Val Val Arg Gln Glu Pro Gly Ala Pro Thr Leu Asp Arg
3503 9620 9625 9630
3504 Val Asp Val Val Gln Pro Val Thr Phe Ala Val Met Val Ser Leu Ala

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Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

| | | | |
|------|---|-------|-------|
| 3505 | 9635 | 9640 | 9645 |
| 3506 | Lys Val Trp Gln His His Gly Ile Thr Pro Gln Ala Val Val Gly His | | |
| 3507 | 9650 | 9655 | 9660 |
| 3508 | Ser Gln Gly Glu Ile Ala Ala Ala Tyr Val Ala Gly Ala Leu Thr Leu | | |
| 3509 | 9665 | 9670 | 9675 |
| 3510 | Asp Asp Ala Ala Arg Val Val Thr Leu Arg Ser Lys Ser Ile Ala Ala | | 9680 |
| 3511 | 9685 | 9690 | 9695 |
| 3512 | His Leu Ala Gly Lys Gly Gly Met Ile Ser Leu Ala Leu Asp Glu Ala | | |
| 3513 | 9700 | 9705 | 9710 |
| 3514 | Ala Val Leu Lys Arg Leu Ser Asp Phe Asp Gly Leu Ser Val Ala Ala | | |
| 3515 | 9715 | 9720 | 9725 |
| 3516 | Val Asn Gly Pro Thr Ala Thr Val Val Ser Gly Asp Pro Thr Gln Ile | | |
| 3517 | 9730 | 9735 | 9740 |
| 3518 | Glu Glu Leu Ala Arg Thr Cys Glu Ala Asp Gly Val Arg Ala Arg Ile | | |
| 3519 | 9745 | 9750 | 9755 |
| 3520 | Ile Pro Val Asp Tyr Ala Ser His Ser Arg Gln Val Glu Ile Ile Glu | | 9760 |
| 3521 | 9765 | 9770 | 9775 |
| 3522 | Lys Glu Leu Ala Glu Val Leu Ala Gly Leu Ala Pro Gln Ala Pro His | | |
| 3523 | 9780 | 9785 | 9790 |
| 3524 | Val Pro Phe Phe Ser Thr Leu Glu Gly Thr Trp Ile Thr Glu Pro Val | | |
| 3525 | 9795 | 9800 | 9805 |
| 3526 | Leu Asp Gly Thr Tyr Trp Tyr Arg Asn Leu Arg His Arg Val Gly Phe | | |
| 3527 | 9810 | 9815 | 9820 |
| 3528 | Ala Pro Ala Val Glu Thr Leu Ala Val Asp Gly Phe Thr His Phe Ile | | |
| 3529 | 9825 | 9830 | 9835 |
| 3530 | Glu Val Ser Ala His Pro Val Leu Thr Met Thr Leu Pro Glu Thr Val | | |
| 3531 | 9845 | 9850 | 9855 |
| 3532 | Thr Gly Leu Gly Thr Leu Arg Arg Glu Gln Gly Gly Gln Glu Arg Leu | | |
| 3533 | 9860 | 9865 | 9870 |
| 3534 | Val Thr Ser Leu Ala Glu Ala Trp Ala Asn Gly Leu Thr Ile Asp Trp | | |
| 3535 | 9875 | 9880 | 9885 |
| 3536 | Ala Pro Ile Leu Pro Thr Ala Thr Gly His His Pro Glu Leu Pro Thr | | |
| 3537 | 9890 | 9895 | 9900 |
| 3538 | Tyr Ala Phe Gln Thr Glu Arg Phe Trp Leu Gln Ser Ser Ala Pro Thr | | |
| 3539 | 9905 | 9910 | 9915 |
| 3540 | Ser Ala Ala Asp Asp Trp Arg Tyr Arg Val Glu Trp Lys Pro Leu Thr | | 9920 |
| 3541 | 9925 | 9930 | 9935 |
| 3542 | Ala Ser Gly Gln Ala Asp Leu Ser Gly Arg Trp Ile Val Ala Val Gly | | |
| 3543 | 9940 | 9945 | 9950 |
| 3544 | Ser Glu Pro Glu Ala Glu Leu Leu Gly Ala Leu Lys Ala Ala Gly Ala | | |
| 3545 | 9955 | 9960 | 9965 |
| 3546 | Glu Val Asp Val Leu Glu Ala Gly Ala Asp Asp Asp Arg Glu Ala Leu | | |
| 3547 | 9970 | 9975 | 9980 |
| 3548 | Ala Ala Arg Leu Thr Ala Leu Thr Thr Gly Asp Gly Phe Thr Gly Val | | |
| 3549 | 9985 | 9990 | 9995 |
| 3550 | Val Ser Leu Leu Asp Asp Leu Val Pro Gln Val Ala Trp Val Gln Ala | | 10000 |
| 3551 | 10005 | 10010 | 10015 |
| 3552 | Leu Gly Asp Ala Gly Ile Lys Ala Pro Leu Trp Ser Val Thr Gln Gly | | |
| 3553 | 10020 | 10025 | 10030 |

Some on
Errors - pp. 27-32
See error summary
Sheet, Item 3

RAW SEQUENCE LISTING

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Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

| | | | |
|-----------|---|-------|-------|
| 3554 | Ala Val Ser Val Gly Arg Leu Asp Thr Pro Ala Asp Pro Asp Arg Ala | | |
| 3555 | 10035 | 10040 | 10045 |
| 3556 | Met Leu Trp Gly Leu Gly Arg Val Val Ala Leu Glu His Pro Glu Arg | | |
| E--> 3557 | 10050 | 10055 | 10060 |
| 3558 | Trp Ala Gly Leu Val Asp Leu Pro Ala Gln Pro Asp Ala Ala Ala Leu | | 1 |
| E--> 3559 | 0065 | 10070 | 10075 |
| 3560 | Ala His Leu Val Thr Ala Leu Ser Gly Ala Thr Gly Glu Asp Gln Ile | | |
| 3561 | 10085 | 10090 | 10095 |
| 3562 | Ala Ile Arg Thr Thr Gly Leu His Ala Arg Arg Leu Ala Arg Ala Pro | | |
| 3563 | 10100 | 10105 | 10110 |
| 3564 | Leu His Gly Arg Arg Pro Thr Arg Asp Trp Gln Pro His Gly Thr Val | | |
| 3565 | 10115 | 10120 | 10125 |
| 3566 | Leu Ile Thr Gly Gly Thr Gly Ala Leu Gly Ser His Ala Ala Arg Trp | | |
| E--> 3567 | 10130 | 10135 | 10140 |
| 3568 | Met Ala His His Gly Ala Glu His Leu Leu Leu Val Ser Arg Ser Gly | | |
| E--> 3569 | 0145 | 10150 | 10155 |
| 3570 | Glu Gln Ala Pro Gly Ala Thr Gln Leu Thr Ala Glu Leu Thr Ala Ser | | |
| 3571 | 10165 | 10170 | 10175 |
| 3572 | Gly Ala Arg Val Thr Ile Ala Ala Cys Asp Val Ala Asp Pro His Ala | | |
| 3573 | 10180 | 10185 | 10190 |
| 3574 | Met Arg Thr Leu Leu Asp Ala Ile Pro Ala Glu Thr Pro Leu Thr Ala | | |
| 3575 | 10195 | 10200 | 10205 |
| 3576 | Val Val His Thr Ala Gly Ala Pro Gly Gly Asp Pro Leu Asp Val Thr | | |
| E--> 3577 | 10210 | 10215 | 10220 |
| 3578 | Gly Pro Glu Asp Ile Ala Arg Ile Leu Gly Ala Lys Thr Ser Gly Ala | | |
| E--> 3579 | 0225 | 10230 | 10235 |
| 3580 | Glu Val Leu Asp Asp Leu Leu Arg Gly Thr Pro Leu Asp Ala Phe Val | | |
| 3581 | 10245 | 10250 | 10255 |
| 3582 | Leu Tyr Ser Ser Asn Ala Gly Val Trp Gly Ser Gly Ser Gln Gly Val | | |
| 3583 | 10260 | 10265 | 10270 |
| 3584 | Tyr Ala Ala Ala Asn Ala His Leu Asp Ala Leu Ala Ala Arg Arg Arg | | |
| 3585 | 10275 | 10280 | 10285 |
| 3586 | Ala Arg Gly Glu Thr Ala Thr Ser Val Ala Trp Gly Leu Trp Ala Gly | | |
| E--> 3587 | 10290 | 10295 | 10300 |
| 3588 | Asp Gly Met Gly Arg Gly Ala Asp Asp Ala Tyr Trp Gln Arg Arg Gly | | |
| E--> 3589 | 0305 | 10310 | 10315 |
| 3590 | Ile Arg Pro Met Ser Pro Asp Arg Ala Leu Asp Glu Leu Ala Lys Ala | | |
| 3591 | 10325 | 10330 | 10335 |
| 3592 | Leu Ser His Asp Glu Thr Phe Val Ala Val Ala Asp Val Asp Trp Glu | | |
| 3593 | 10340 | 10345 | 10350 |
| 3594 | Arg Phe Ala Pro Ala Phe Thr Val Ser Arg Pro Ser Leu Leu Leu Asp | | |
| 3595 | 10355 | 10360 | 10365 |
| 3596 | Gly Val Pro Glu Ala Arg Gln Ala Leu Ala Ala Pro Val Gly Ala Pro | | |
| E--> 3597 | 10370 | 10375 | 10380 |
| 3598 | Ala Pro Gly Asp Ala Ala Val Ala Pro Thr Gly Gln Ser Ser Ala Leu | | |
| E--> 3599 | 0385 | 10390 | 10395 |
| 3600 | Ala Ala Ile Thr Ala Leu Pro Glu Pro Glu Arg Arg Pro Ala Leu Leu | | |
| 3601 | 10405 | 10410 | 10415 |
| 3602 | Thr Leu Val Arg Thr His Ala Ala Val Leu Gly His Ser Ser Pro | | |

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Input Set : A:\Sequence Listing.txt
 Output Set: N:\CRF3\11212001\I988384.raw

| | | | |
|-----------|---|-------|-------|
| 3603 | 10420 | 10425 | 10430 |
| 3604 | Asp Arg Val Ala Pro Gly Arg Ala Phe Thr Glu Leu Gly Phe Asp Ser | | |
| 3605 | 10435 | 10440 | 10445 |
| 3606 | Leu Thr Ala Val Gln Leu Arg Asn Gln Leu Ser Thr Val Val Gly Asn | | |
| E--> 3607 | 10450 | 10455 | 10460 |
| 3608 | Arg Leu Pro Ala Thr Thr Val Phe Asp His Pro Thr Pro Ala Ala Leu | | 1 |
| E--> 3609 | 0465 | 10470 | 10475 |
| 3610 | Ala Ala His Leu His Glu Ala Tyr Leu Ala Pro Ala Glu Pro Ala Pro | | 10480 |
| 3611 | 10485 | 10490 | 10495 |
| 3612 | Thr Asp Trp Glu Gly Arg Val Arg Arg Ala Leu Ala Glu Leu Pro Leu | | |
| 3613 | 10500 | 10505 | 10510 |
| 3614 | Asp Arg Leu Arg Asp Ala Gly Val Leu Asp Thr Val Leu Arg Leu Thr | | |
| 3615 | 10515 | 10520 | 10525 |
| 3616 | Gly Ile Glu Pro Glu Pro Gly Ser Gly Ser Asp Gly Gly Ala Ala | | |
| E--> 3617 | 10530 | 10535 | 10540 |
| 3618 | Asp Pro Gly Ala Glu Pro Glu Ala Ser Ile Asp Asp Leu Asp Ala Glu | | 1 |
| E--> 3619 | 0545 | 10550 | 10555 |
| 3620 | Ala Leu Ile Arg Met Ala Leu Gly Pro Arg Asn Thr Met Thr Ser Ser | | 10560 |
| 3621 | 10565 | 10570 | 10575 |
| 3622 | Asn Glu Gln Leu Val Asp Ala Leu Arg Ala Ser Leu Lys Glu Asn Glu | | |
| 3623 | 10580 | 10585 | 10590 |
| 3624 | Glu Leu Arg Lys Glu Ser Arg Arg Arg Ala Asp Arg Arg Gln Glu Pro | | |
| 3625 | 10595 | 10600 | 10605 |
| 3626 | Met Ala Ile Val Gly Met Ser Cys Arg Phe Ala Gly Gly Ile Arg Ser | | |
| E--> 3627 | 10610 | 10615 | 10620 |
| 3628 | Pro Glu Asp Leu Trp Asp Ala Val Ala Ala Gly Lys Asp Leu Val Ser | | 1 |
| E--> 3629 | 0625 | 10630 | 10635 |
| 3630 | Glu Val Pro Glu Glu Arg Gly Trp Asp Ile Asp Ser Leu Tyr Asp Pro | | 10640 |
| 3631 | 10645 | 10650 | 10655 |
| 3632 | Val Pro Gly Arg Lys Gly Thr Thr Tyr Val Arg Asn Ala Ala Phe Leu | | |
| 3633 | 10660 | 10665 | 10670 |
| 3634 | Asp Asp Ala Ala Gly Phe Asp Ala Ala Phe Phe Gly Ile Ser Pro Arg | | |
| 3635 | 10675 | 10680 | 10685 |
| 3636 | Glu Ala Leu Ala Met Asp Pro Gln Gln Arg Gln Leu Leu Glu Ala Ser | | |
| E--> 3637 | 10690 | 10695 | 10700 |
| 3638 | Trp Glu Val Phe Glu Arg Ala Gly Ile Asp Pro Ala Ser Val Arg Gly | | 1 |
| E--> 3639 | 0705 | 10710 | 10715 |
| 3640 | Thr Asp Val Gly Val Tyr Val Gly Cys Gly Tyr Gln Asp Tyr Ala Pro | | 10720 |
| 3641 | 10725 | 10730 | 10735 |
| 3642 | Asp Ile Arg Val Ala Pro Glu Gly Thr Gly Gly Tyr Val Val Thr Gly | | |
| 3643 | 10740 | 10745 | 10750 |
| 3644 | Asn Ser Ser Ala Val Ala Ser Gly Arg Ile Ala Tyr Ser Leu Gly Leu | | |
| 3645 | 10755 | 10760 | 10765 |
| 3646 | Glu Gly Pro Ala Val Thr Val Asp Thr Ala Cys Ser Ser Ser Leu Val | | |
| E--> 3647 | 10770 | 10775 | 10780 |
| 3648 | Ala Leu His Leu Ala Leu Lys Gly Leu Arg Asn Gly Asp Cys Ser Thr | | 1 |
| E--> 3649 | 0785 | 10790 | 10795 |
| 3650 | Ala Leu Val Gly Gly Val Ala Val Leu Ala Thr Pro Gly Ala Phe Ile | | 10800 |
| 3651 | 10805 | 10810 | 10815 |

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Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

3652 Glu Phe Ser Ser Gln Gln Ala Met Ala Ala Asp Gly Arg Thr Lys Gly
3653 10820 10825 10830
3654 Phe Ala Ser Ala Ala Asp Gly Leu Ala Trp Gly Glu Gly Val Ala Val
3655 10835 10840 10845
3656 Leu Leu Leu Glu Arg Leu Ser Asp Ala Arg Arg Lys Gly His Arg Val
E--> 3657 10850 10855 10860 1
3658 Leu Ala Val Val Arg Gly Ser Ala Ile Asn Gln Asp Gly Ala Ser Asn
E--> 3659 0865 10870 10875 10880
3660 Gly Leu Thr Ala Pro His Gly Pro Ser Gln Gln His Leu Ile Arg Gln
3661 10885 10890 10895
3662 Ala Leu Ala Asp Ala Arg Leu Thr Ser Ser Asp Val Asp Val Val Glu
3663 10900 10905 10910
3664 Gly His Gly Thr Gly Thr Arg Leu Gly Asp Pro Ile Glu Ala Gln Ala
3665 10915 10920 10925
3666 Leu Leu Ala Thr Tyr Gly Gln Gly Arg Ala Pro Gly Gln Pro Leu Arg
E--> 3667 10930 10935 10940 1
3668 Leu Gly Thr Leu Lys Ser Asn Ile Gly His Thr Gln Ala Ala Ser Gly
E--> 3669 0945 10950 10955 10960
3670 Val Ala Gly Val Ile Lys Met Val Gln Ala Leu Arg His Gly Val Leu
3671 10965 10970 10975
3672 Pro Lys Thr Leu His Val Asp Glu Pro Thr Asp Gln Val Asp Trp Ser
3673 10980 10985 10990
3674 Ala Gly Ser Val Glu Leu Leu Thr Glu Ala Val Asp Trp Pro Glu Arg
3675 10995 11000 11005
3676 Pro Gly Arg Leu Arg Arg Ala Gly Val Ser Ala Phe Gly Val Gly Gly
E--> 3677 11010 11015 11020 1
3678 Thr Asn Ala His Val Val Leu Glu Ala Pro Ala Val Glu Glu Ser
E--> 3679 1025 11030 11035 11040
3680 Pro Ala Val Glu Pro Pro Ala Gly Gly Val Val Pro Trp Pro Val
3681 11045 11050 11055
3682 Ser Ala Lys Thr Ser Ala Ala Leu Asp Ala Gln Ile Gly Gln Leu Ala
3683 11060 11065 11070
3684 Ala Tyr Ala Glu Asp Arg Thr Asp Val Asp Pro Ala Val Ala Ala Arg
3685 11075 11080 11085
3686 Ala Leu Val Asp Ser Arg Thr Ala Met Glu His Arg Ala Val Ala Val
E--> 3687 11090 11095 11100 1
3688 Gly Asp Ser Arg Glu Ala Leu Arg Asp Ala Leu Arg Met Pro Glu Gly
E--> 3689 1105 11110 11115 11120
3690 Leu Val Arg Gly Thr Val Thr Asp Pro Gly Arg Val Ala Phe Val Phe
3691 11125 11130 11135
3692 Pro Gly Gln Gly Thr Gln Trp Ala Gly Met Gly Ala Glu Leu Leu Asp
3693 11140 11145 11150
3694 Ser Ser Pro Glu Phe Ala Ala Met Ala Glu Cys Glu Thr Ala Leu
3695 11155 11160 11165
3696 Ser Pro Tyr Val Asp Trp Ser Leu Glu Ala Val Val Arg Gln Ala Pro
E--> 3697 11170 11175 11180 1
3698 Ser Ala Pro Thr Leu Asp Arg Val Asp Val Val Gln Pro Val Thr Phe
E--> 3699 11185 11190 11195 11200
3700 Ala Val Met Val Ser Leu Ala Lys Val Trp Gln His His Gly Ile Thr

RAW SEQUENCE LISTING
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Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

| | | | |
|-----------|---|-------|-------------|
| 3701 | 11205 | 11210 | 11215 |
| 3702 | Pro Glu Ala Val Ile Gly His Ser Gln Gly Glu Ile Ala Ala Ala Tyr | | |
| 3703 | 11220 | 11225 | 11230 |
| 3704 | Val Ala Gly Ala Leu Thr Leu Asp Asp Ala Ala Arg Val Val Thr Leu | | |
| 3705 | 11235 | 11240 | 11245 |
| 3706 | Arg Ser Lys Ser Ile Ala Ala His Leu Ala Gly Lys Gly Gly Met Ile | | |
| E--> 3707 | 11250 | 11255 | 11260 1 |
| 3708 | Ser Leu Ala Leu Ser Glu Glu Ala Thr Arg Gln Arg Ile Glu Asn Leu | | |
| E--> 3709 | 1265 | 11270 | 11275 11280 |
| 3710 | His Gly Leu Ser Ile Ala Ala Val Asn Gly Pro Thr Ala Thr Val Val | | |
| 3711 | 11285 | 11290 | 11295 |
| 3712 | Ser Gly Asp Pro Thr Gln Ile Gln Glu Leu Ala Gln Ala Cys Glu Ala | | |
| 3713 | 11300 | 11305 | 11310 |
| 3714 | Asp Gly Ile Arg Ala Arg Ile Ile Pro Val Asp Tyr Ala Ser His Ser | | |
| 3715 | 11315 | 11320 | 11325 |
| 3716 | Ala His Val Glu Thr Ile Glu Asn Glu Leu Ala Asp Val Leu Ala Gly | | |
| E--> 3717 | 11330 | 11335 | 11340 1 |
| 3718 | Leu Ser Pro Gln Thr Pro Gln Val Pro Phe Phe Ser Thr Leu Glu Gly | | |
| E--> 3719 | 1345 | 11350 | 11355 11360 |
| 3720 | Thr Trp Ile Thr Glu Pro Ala Leu Asp Gly Gly Tyr Trp Tyr Arg Asn | | |
| 3721 | 11365 | 11370 | 11375 |
| 3722 | Leu Arg His Arg Val Gly Phe Ala Pro Ala Val Glu Thr Leu Ala Thr | | |
| 3723 | 11380 | 11385 | 11390 |
| 3724 | Asp Glu Gly Phe Thr His Phe Ile Glu Val Ser Ala His Pro Val Leu | | |
| 3725 | 11395 | 11400 | 11405 |
| 3726 | Thr Met Thr Leu Pro Asp Lys Val Thr Gly Leu Ala Thr Leu Arg Arg | | |
| E--> 3727 | 11410 | 11415 | 11420 1 |
| 3728 | Glu Asp Gly Gly Gln His Arg Leu Thr Thr Ser Leu Ala Glu Ala Trp | | |
| E--> 3729 | 1425 | 11430 | 11435 11440 |
| 3730 | Ala Asn Gly Leu Ala Leu Asp Trp Ala Ser Leu Leu Pro Ala Thr Gly | | |
| 3731 | 11445 | 11450 | 11455 |
| 3732 | Ala Leu Ser Pro Ala Val Pro Asp Leu Pro Thr Tyr Ala Phe Gln His | | |
| 3733 | 11460 | 11465 | 11470 |
| 3734 | Arg Ser Tyr Trp Ile Ser Pro Ala Gly Pro Gly Glu Ala Pro Ala His | | |
| 3735 | 11475 | 11480 | 11485 |
| 3736 | Thr Ala Ser Gly Arg Glu Ala Val Ala Glu Thr Gly Leu Ala Trp Gly | | |
| E--> 3737 | 11490 | 11495 | 11500 1 |
| 3738 | Pro Gly Ala Glu Asp Leu Asp Glu Glu Gly Arg Arg Ser Ala Val Leu | | |
| E--> 3739 | 1505 | 11510 | 11515 11520 |
| 3740 | Ala Met Val Met Arg Gln Ala Ala Ser Val Leu Arg Cys Asp Ser Pro | | |
| 3741 | 11525 | 11530 | 11535 |
| 3742 | Glu Glu Val Pro Val Asp Arg Pro Leu Arg Glu Ile Gly Phe Asp Ser | | |
| 3743 | 11540 | 11545 | 11550 |
| 3744 | Leu Thr Ala Val Asp Phe Arg Asn Arg Val Asn Arg Leu Thr Gly Leu | | |
| 3745 | 11555 | 11560 | 11565 |
| 3746 | Gln Leu Pro Pro Thr Val Val Phe Gln His Pro Thr Pro Val Ala Leu | | |
| E--> 3747 | 11570 | 11575 | 11580 1 |
| 3748 | Ala Glu Arg Ile Ser Asp Glu Leu Ala Glu Arg Asn Trp Ala Val Ala | | |
| E--> 3749 | 1585 | 11590 | 11595 11600 |

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| | | | | |
|-----------|---|-------|-------|-------|
| 3750 | Glu Pro Ser Asp His Glu Gln Ala Glu Glu Lys Ala Ala Ala Pro | | | |
| 3751 | 11605 | 11610 | 11615 | |
| 3752 | Ala Gly Ala Arg Ser Gly Ala Asp Thr Gly Ala Gly Ala Gly Met Phe | | | |
| 3753 | 11620 | 11625 | 11630 | |
| 3754 | Arg Ala Leu Phe Arg Gln Ala Val Glu Asp Asp Arg Tyr Gly Glu Phe | | | |
| 3755 | 11635 | 11640 | 11645 | |
| 3756 | Leu Asp Val Leu Ala Glu Ala Ser Ala Phe Arg Pro Gln Phe Ala Ser | | | |
| E--> 3757 | 11650 | 11655 | 11660 | 1 |
| 3758 | Pro Glu Ala Cys Ser Glu Arg Leu Asp Pro Val Leu Leu Ala Gly Gly | | | |
| E--> 3759 | 1665 | 11670 | 11675 | 11680 |
| 3760 | Pro Thr Asp Arg Ala Glu Gly Arg Ala Val Leu Val Gly Cys Thr Gly | | | |
| 3761 | 11685 | 11690 | 11695 | |
| 3762 | Thr Ala Ala Asn Gly Gly Pro His Glu Phe Leu Arg Leu Ser Thr Ser | | | |
| 3763 | 11700 | 11705 | 11710 | |
| 3764 | Phe Gln Glu Glu Arg Asp Phe Leu Ala Val Pro Leu Pro Gly Tyr Gly | | | |
| 3765 | 11715 | 11720 | 11725 | |
| 3766 | Thr Gly Thr Gly Thr Gly Thr Ala Leu Leu Pro Ala Asp Leu Asp Thr | | | |
| E--> 3767 | 11730 | 11735 | 11740 | 1 |
| 3768 | Ala Leu Asp Ala Gln Ala Arg Ala Ile Leu Arg Ala Ala Gly Asp Ala | | | |
| E--> 3769 | 1745 | 11750 | 11755 | 11760 |
| 3770 | Pro Val Val Leu Leu Gly His Ser Gly Gly Ala Leu Leu Ala His Glu | | | |
| 3771 | 11765 | 11770 | 11775 | |
| 3772 | Leu Ala Phe Arg Leu Glu Arg Ala His Gly Ala Pro Pro Ala Gly Ile | | | |
| 3773 | 11780 | 11785 | 11790 | |
| 3774 | Val Leu Val Asp Pro Tyr Pro Pro Gly His Gln Glu Pro Ile Glu Val | | | |
| 3775 | 11795 | 11800 | 11805 | |
| 3776 | Trp Ser Arg Gln Leu Gly Glu Gly Leu Phe Ala Gly Glu Leu Glu Pro | | | |
| E--> 3777 | 11810 | 11815 | 11820 | 1 |
| 3778 | Met Ser Asp Ala Arg Leu Leu Ala Met Gly Arg Tyr Ala Arg Phe Leu | | | |
| E--> 3779 | 1825 | 11830 | 11835 | 11840 |
| 3780 | Ala Gly Pro Arg Pro Gly Arg Ser Ser Ala Pro Val Leu Leu Val Arg | | | |
| 3781 | 11845 | 11850 | 11855 | |
| 3782 | Ala Ser Glu Pro Leu Gly Asp Trp Gln Glu Glu Arg Gly Asp Trp Arg | | | |
| 3783 | 11860 | 11865 | 11870 | |
| 3784 | Ala His Trp Asp Leu Pro His Thr Val Ala Asp Val Pro Gly Asp His | | | |
| 3785 | 11875 | 11880 | 11885 | |
| 3786 | Phe Thr Met Met Arg Asp His Ala Pro Ala Val Ala Glu Ala Val Leu | | | |
| E--> 3787 | 11890 | 11895 | 11900 | 1 |
| 3788 | Ser Trp Leu Asp Ala Ile Glu Gly Ile Glu Gly Ala Gly Lys Met Thr | | | |
| E--> 3789 | 1905 | 11910 | 11915 | 11920 |
| 3790 | Asp Arg Pro Leu Asn Val Asp Ser Gly Leu Trp Ile Arg Arg Phe His | | | |
| 3791 | 11925 | 11930 | 11935 | |
| 3792 | Pro Ala Pro Asn Ser Ala Val Arg Leu Val Cys Leu Pro His Ala Gly | | | |
| 3793 | 11940 | 11945 | 11950 | |
| 3794 | Gly Ser Ala Ser Tyr Phe Phe Arg Phe Ser Glu Glu Leu His Pro Ser | | | |
| 3795 | 11955 | 11960 | 11965 | |
| 3796 | Val Glu Ala Leu Ser Val Gln Tyr Pro Gly Arg Gln Asp Arg Arg Ala | | | |
| E--> 3797 | 11970 | 11975 | 11980 | 1 |
| 3798 | Glu Pro Cys Leu Glu Ser Val Glu Glu Leu Ala Glu His Val Val Ala | | | |

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| | | | | |
|-----------|---|-------|-------|-------|
| E--> 3799 | 1985 | 11990 | 11995 | 12000 |
| 3800 | Ala Thr Glu Pro Trp Trp Gln Glu Gly Arg Leu Ala Phe Phe Gly His | | | |
| 3801 | 12005 | 12010 | 12015 | |
| 3802 | Ser Leu Gly Ala Ser Val Ala Phe Glu Thr Ala Arg Ile Leu Glu Gln | | | |
| 3803 | 12020 | 12025 | 12030 | |
| 3804 | Arg His Gly Val Arg Pro Glu Gly Leu Tyr Val Ser Gly Arg Arg Ala | | | |
| 3805 | 12035 | 12040 | 12045 | |
| 3806 | Pro Ser Leu Ala Pro Asp Arg Leu Val His Gln Leu Asp Asp Arg Ala | | | |
| E--> 3807 | 12050 | 12055 | 12060 | 1 |
| 3808 | Phe Leu Ala Glu Ile Arg Arg Leu Ser Gly Thr Asp Glu Arg Phe Leu | | | |
| E--> 3809 | 2065 | 12070 | 12075 | 12080 |
| 3810 | Gln Asp Asp Glu Leu Leu Arg Leu Val Leu Pro Ala Leu Arg Ser Asp | | | |
| 3811 | 12085 | 12090 | 12095 | |
| 3812 | Tyr Lys Ala Ala Glu Thr Tyr Leu His Arg Pro Ser Ala Lys Leu Thr | | | |
| 3813 | 12100 | 12105 | 12110 | |
| 3814 | Cys Pro Val Met Ala Leu Ala Gly Asp Arg Asp Pro Lys Ala Pro Leu | | | |
| 3815 | 12115 | 12120 | 12125 | |
| 3816 | Asn Glu Val Ala Glu Trp Arg Arg His Thr Ser Gly Pro Phe Cys Leu | | | |
| E--> 3817 | 12130 | 12135 | 12140 | 1 |
| 3818 | Arg Ala Tyr Ser Gly Gly His Phe Tyr Leu Asn Asp Gln Trp His Glu | | | |
| E--> 3819 | 2145 | 12150 | 12155 | 12160 |
| 3820 | Ile Cys Asn Asp Ile Ser Asp His Leu Leu Val Thr Arg Gly Ala Pro | | | |
| 3821 | 12165 | 12170 | 12175 | |
| 3822 | Asp Ala Arg Val Val Gln Pro Pro Thr Ser Leu Ile Glu Gly Ala Ala | | | |
| 3823 | 12180 | 12185 | 12190 | |
| 3824 | Lys Arg Trp Gln Asn Pro Arg | | | |
| E--> 3825 | 12195 | 1 | | |
| 3830 | <210> SEQ ID NO: 7 | | | |
| 3831 | <211> LENGTH: 1248 | | | |
| 3832 | <212> TYPE: DNA | | | |
| 3833 | <213> ORGANISM: Streptomyces venezuelae | | | |
| 3835 | <400> SEQUENCE: 7 | | | |
| E--> 3836 | gtgaaaagcg ccttatccga cctcgcattc ttccggcgccc ccgcggcttt cgaccagccg | | | |
| 3837 | 60 | | | |
| E--> 3838 | ctcctcggtgg ggccggcccaa ccgcacatcgac cgcgccaggc tgtacgagcg gctcgaccgg | | | |
| 3839 | 120 | | | |
| E--> 3840 | gccctcgaca gccagtggct gtccaaacggc ggcccgctcg tccgcgagtt cgaggagcgc | | | |
| 3841 | 180 | | | |
| E--> 3842 | gtcgccgggc tcgccccgggt ccggcatgcc gtggccaccc gcaacgccac ggccgggctc | | | |
| 3843 | 240 | | | |
| E--> 3844 | cagctcctcg cgcacgcccgc cggcctcacc ggcgaagtga tcatgcccgtc gatgacgttc | | | |
| 3845 | 300 | | | |
| E--> 3846 | gccgccaccc cgcacgcact ggcgtggatc ggcctcaccc cggcttgcgc cgcacatcgac | | | |
| 3847 | 360 | | | |
| E--> 3848 | ccggacaccc gcaacctcga cccggaccag gtggccggccg cggtcacacc cccgacaccc | | | |
| 3849 | 420 | | | |
| E--> 3850 | gccgtcgctcg gcgtccacct ctggggccgc ccctgcgcgg ccgaccagct gcggaaaggtc | | | |
| 3851 | 480 | | | |
| E--> 3852 | gccgacgagc acggcctcgcg gctgtacttc gacgccgcgc acgcctcg ggctcgccgtc | | | |

pp.32-52
Errors - See error
summary sheet, Item 1

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3853 540
E--> 3854 gacggccggc cgcggcgac gcccgggtct tcagcttcca cgccaccaag
3855 600
E--> 3856 gccgtcaacg ctttcgaggc cggcgccgtc gtcaccgacg acggccgaccc cggccggccgg
3857 660
E--> 3858 atcccgcccc tccacaactt cggcttcgac ctgcccggcg gcagccccgc cggcgggacc
3859 720
E--> 3860 aacgccaaga tgagcgaggc cggccggcc atgggcctca cttccctcga cgcgttccc
3861 780
E--> 3862 gaggtcatcg accggAACCG ggcgaaccac gccgcctacc gcgagcacct cgcggaccc
3863 840
E--> 3864 cccggcgtcc tcgtcgccga ccacgaccgc cacggcctca acaaccacca gtacgtgatc
3865 900
E--> 3866 gtcgagatcg acgaggccac caccggcatc caccggcacc tcgtcatgga ggtcctgaag
3867 960
E--> 3868 gccgaaggcg tgcacaccccg cgcctacttc tcgcccggct gccacgagct ggagccgtac
3869 1020
E--> 3870 cgcggcagc cgcacgcccc gctgccgcac accgaacgcc tcgcccggcg cgtgtgtcc
3871 1080
E--> 3872 ctgcccggccg gcacccgcat cggcgacgac gacatccgcc gggtcgcccga cctgctgcgt
3873 1140
E--> 3874 ctctgcccga cccggggccg cgaactgacc gcgcgcacc ggcacacggc cccggccccg
3875 1200
E--> 3876 ctgcggcccc cccagacatc cacggccacg attggacgct cccgatga
3877 1248
3938 <210> SEQ ID NO: 9
3939 <211> LENGTH: 1458
3940 <212> TYPE: DNA
3941 <213> ORGANISM: Streptomyces venezuelae
3943 <400> SEQUENCE: 9
E--> 3944 atgaccggccc cgcgccttc cgccaccgccc cggccgaac gctgcgcgca cccggagcc
3945 60
E--> 3946 gatctggggg cggcggtcca cgcgtcgcc cagaccctcg cggccggcg cctcgatcg
3947 120
E--> 3948 cccgacgagg cggaaacgac cgcgcgcac ctcgtccggc tcgcccgtcg ctacggcaac
3949 180
E--> 3950 agccccctca ccccgcttcca ggaggccccgc caccgacctgg gcgtcgaccg ggacgccttc
3951 240
E--> 3952 cggcgctcc tcgcccgttt cggcgaggc cggagactcc gcaccgcgg ctagaccggc
3953 300
E--> 3954 cccgcgggg cgtactggaa gaacaccctg ctcggctcg aacagcgccg cgtttcgac
3955 360
E--> 3956 cggcgctcg ccaggaagcc cgtttcccg tacagcgatcg gcctctaccc cggccggacc
3957 420
E--> 3958 tgcgttgtcc gctgccactt ctgcgtccgt gtgaccggcg cccgctacga cccgtccgccc
3959 480
E--> 3960 ctgcacgccc gcaacgcccatt gttccggatcg gtcatcgacg agataccgc gggcaacccc
3961 540
E--> 3962 tcggcgatgt acttctccgg cggcctggag cgcgtccacca accccggcct cgggagccgt

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3963 600
E--> 3964 gccgcgcacg ccaccgacca cggcctgcgg cccaccgtct acacgaactc cttcgcgctc
3965 660
E--> 3966 accgagcgca ccctggagcg ccagccggc ctctgggcc tgcacgcat ccgcacctcg
3967 720
E--> 3968 ctctacggcc tcaacgacga ggagtacgag cagaccaccc gcaagaaggc cgcctccgc
3969 780
E--> 3970 cgcgtccgcg agaacctgcg ccgcttccag cagctgcgcg ccgagcgcga gtcgcccata
3971 840
E--> 3972 aacctcggt tcgcctacat cgtgctcccg ggccgtgcct cccgcctgct cgacctggtc
3973 900
E--> 3974 gacttcatcg ccgacactcaa cgacgcgggg cagggcagga cgatcgactt cgtcaacatt
3975 960
E--> 3976 cgcgaggact acagcggccg tgacgacggc aagctgccgc aggaggagcg ggccgagctc
3977 1020
E--> 3978 caggaggccc tcaacgcctt cgaggagcgg gtccgcgagc gcaccccccgg actccacatc
3979 1080
E--> 3980 gactacggct acgcctgaa cagcctgcgc accggggccg acgcctaact gctgcggatc
3981 1140
E--> 3982 aagccgcaca ccatgcggcc caccgcgcac ccgcaggatcg cggtgcaagg cgatctccctc
3983 1200
E--> 3984 ggcgcacgtgt acctgtaccc cgaggccggc ttccccgacc tggacggcgc gacccgtac
3985 1260
E--> 3986 atcgcgggcc gcgtgacccc cgacacctcc ctcaccgagg tcgtcaggga cttcgatcgag
3987 1320
E--> 3988 cgcggcggcg aggtggcggc cgtcgacggc gacgagtaact tcatggacgg cttcgatcag
3989 1380
E--> 3990 gtcgtcaccg cccgcctgaa ccagctggag cgcgacgcgc cggacggctg ggaggaggcc
3991 1440
E--> 3992 cgcggcttcc tgcgtgt
3993 1458
4064 <210> SEQ ID NO: 11
4065 <211> LENGTH: 879
4066 <212> TYPE: DNA
4067 <213> ORGANISM: Streptomyces venezuelae
4069 <400> SEQUENCE: 11
E--> 4070 atgaaggaa tagtcctggc cggggggagc ggaactcggc tgcacccggc gacctcggtc
4071 60
E--> 4072 atttcaagc agattcttcc ggtctacaac aaaccgatga tctactatcc gctgtcggtt
4073 120
E--> 4074 ctcatgtcg gcggtattcg cgagattcaa atcatctcgatcc ccccccggc catcgaaactc
4075 180
E--> 4076 ttccagtcgc ttctcgaaa cggcaggcac ctggaaatag aactcgacta tgcggtccag
4077 240
E--> 4078 aaagagcccg caggaatcgc ggacgcactt ctcgtcgag ccgagcacat cggcgcacgac
4079 300
E--> 4080 acctgcgcgc tgatcctggc cgacaacatc ttccacgggc cggcctcta cacgctccctg
4081 360
E--> 4082 cgggacagca tcgcgcgcct cgacggctgc gtgcgtttcg gctacccgggt caaggacccc

```

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4083 420
E--> 4084 gaggcggtacg gcgtcgccga ggtggacgcg acggggccggc tgaccgacct cgtcgagaag
4085 480
E--> 4086 cccgtcaagc cgcgctccaa cctcgccgtc accggcctct acctctacga caacgacgtc
4087 540
E--> 4088 gtgcacatcg ccaagaacat ccggccctcg ccgcgcggcg agctggagat caccgacgtc
4089 600
E--> 4090 aaccgcgtct acctggagcg gggccgggccc gaactcgta acctgggccc cggcttcgcc
4091 660
E--> 4092 tggctggaca ccggcaccca cgactcgctc ctgcgggccc cccagtacgt ccaggtcctg
4093 720
E--> 4094 gaggagcggc agggcgtctg gatcgccggc cttgaggaga tcgccttccg catgggcttc
4095 780
E--> 4096 atcgacgccc aggccctgtca cggcctggga gaaggcctct cccgcaccga gtacggcagc
4097 840
E--> 4098 tatctgatgg agatcgccgg ccgcgaggga gccccgtga
4099 879
4146 <210> SEQ ID NO: 13
4147 <211> LENGTH: 1014
4148 <212> TYPE: DNA
4149 <213> ORGANISM: Streptomyces venezuelae
4151 <400> SEQUENCE: 13
E--> 4152 gtgcgcgttc tggtgaccgg aggtgcgggc ttcatcggt cgcaattcggt gcggcagctc
4153 60
E--> 4154 ctcgcgggg cgtaccccgta cgtccccggc gatgaggtga tcgtcctggaa cagcctcacc
4155 120
E--> 4156 tacgcgggca accgcgccaa cctcgccccg gtggacgcgg acccgcaact ggcgttcgtc
4157 180
E--> 4158 cacggcgaca tccgcgacgc cggcctcctc gcccgggaac tgcgccgggt ggacgcacatc
4159 240
E--> 4160 gtccacttcg cggccgagag ccacgtggac cgctccatcg cggcgcgtc cgtgttccacc
4161 300
E--> 4162 gagaccaacg tgcagggcac gcagacgctg ctccagtgcg cggcgcacgc cggcgtcgcc
4163 360
E--> 4164 cgggtcgtgc acgtctccac cgacgaggtg tacgggtcga tcgactccgg ctccctggacc
4165 420
E--> 4166 gagagcagcc cgctggagcc caactcgccc tacgcggcggt ccaaggccgg ctccgacatc
4167 480
E--> 4168 gttgcccgcg cctaccaccc gacgtacggc ctcgacgtac ggatcaccgg ctgctgcaac
4169 540
E--> 4170 aactacgggc cgtaccagca ccccgagaag ctcatcccc tcttcgtac gAACCTCCTC
4171 600
E--> 4172 gacggcgaaa cgctcccgt gtacggcgac ggccgcgaacg tccgcgagtg ggtgcacacc
4173 660
E--> 4174 gacgaccact gccggggcat cgcgctcggtc ctcgcggcgcc gcccggccgg cgagatctac
4175 720
E--> 4176 cacatcgccg gccgcctggaa gctgaccaac cgcaactca ccggcatcct cctggactcg
4177 780
E--> 4178 ctcggcgccg actggtcctc ggtccggaaag gtcgcgcacc gcaaggccca cgacctgcgc

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4179 840
E--> 4180 tactccctcg acggcggcga gatcgagcgc gagctcggtt accgcccga ggttccttc
4181 900
E--> 4182 gcggacggcc tcgcgcggac cgtccgctgg taccggaga accgcggctg gtgggagccg
4183 960
E--> 4184 ctcaaggcga ccgcggcga gctggccgc accgcgtgg aggtgtccgc gtga
4185 1014
4238 <210> SEQ ID NO: 15
4239 <211> LENGTH: 1140
4240 <212> TYPE: DNA
4241 <213> ORGANISM: Streptomyces venezuelae
4243 <400> SEQUENCE: 15
E--> 4244 gtgagcagcc gcgcgcgagac ccccgcgtc cccttcctcg acctaaggc cgctacgag
4245 60
E--> 4246 gagctccgcg cggagaccga cgcgcgatc gcccgcgtcc tcgactcggtt ggcgtaccc
4247 120
E--> 4248 ctcggacccg aactcgaagg attcgaggcg gagttcgccg cgtactgcga gacggaccac
4249 180
E--> 4250 gccgtcggcg tgaacagcgg gatggacgcc ctccagctcg ccctccgcgg cctcggcatc
4251 240
E--> 4252 ggaccgggg acgaggttat cgtccctcg cacacgtaca tcgcccagctg gtcgcggtg
4253 300
E--> 4254 tccgcacccg gcgcgcaccc cgtgcccgtc gagccgcacg aggaccaccc caccctggac
4255 360
E--> 4256 ccgctgcgtcg tcgagaaggc gatcaccccc cgcacccggc cgctcctccc cgtccaccc
4257 420
E--> 4258 tacggcacc cgcgcacat ggacgcgcgc cgcgcgtcg cggaccggca cggcctgcac
4259 480
E--> 4260 atcgtcgagg acgcccgcga ggcccacggc gcccgttacc gggccggcg gatcggcgcc
4261 540
E--> 4262 gggtcgtcggtt tggccgcgtt cagttctac cggggcaaga acctcggtt cttcgccgac
4263 600
E--> 4264 ggcggcgccg tcgtcaccgg cgaccccgag ctcgcgaac ggctccggat gtcgcgaac
4265 660
E--> 4266 tacggctcg cgcagaagta cagccacgag acgaaggca ccaactcccg cctggacgag
4267 720
E--> 4268 atgcaggccg cctgtctcg gatccggctc gcccacctgg acagctggaa cggccgcagg
4269 780
E--> 4270 tcggcgctgg cgcggagta ccttcgggg ctcgcggac tgccggcat cggcctgcgg
4271 840
E--> 4272 gtgaccgcgc cgcacaccga cccggcttgg cacctttca cctgtcgac ctagcggccgc
4273 900
E--> 4274 gacgagctgc gcagccacct cgcgcgcgc ggcacgcaca ccctcagca ctacccggta
4275 960
E--> 4276 cccgtcacc ttcgcggcgc ctacgcggc gaggcaccgc cggaggctc gtcggcgcc
4277 1020
E--> 4278 gccgagagct tcgcgcggca ggtcctcagc ctgcgcgtcg gcccgcaccc ggagcggccgc
4279 1080
E--> 4280 caggcgctgc gggtgatcga cgcgtcgca gaatggccgc agcgggtcga ccaggcttag

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Input Set : A:\Sequence Listing.txt
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4281 1140
4338 <210> SEQ ID NO: 17
4339 <211> LENGTH: 714
4340 <212> TYPE: DNA
4341 <213> ORGANISM: Streptomyces venezuelae
4343 <400> SEQUENCE: 17
E--> 4344  gtgtacgaag tcgaccacgc cgacgtctac gacctttct acctgggtcg cggcaaggac
4345 60
E--> 4346  tacgcgcgcg aggcctccga catgcgcgcac ctgggtcgct cccgtacccc cgaggcctcc
4347 120
E--> 4348  tcgctcctgg acgtggcctg cggtaacgggc acgcatactgg agcaacttcac caaggagttc
4349 180
E--> 4350  ggcgcacaccg cccgcctgga gctgtccgag gacatgctca cccacgccc caagcggctg
4351 240
E--> 4352  cccgacgcca cgctccacca gggcgacatg cgggacttcc ggctcgcccg gaagttctcc
4353 300
E--> 4354  gccgtggtca gcatgttcag ctccgtcgcc tacctaaga cgaccgagga actcggcgcg
4355 360
E--> 4356  gccgtcgccct cgttcgccga gcacctggag cccgggtggcg tcgtcgctgt cgagccgtgg
4357 420
E--> 4358  tggttcccg agaccttcgc cgacggctgg gtcagcggcc acgtcgccg ccgtgacggg
4359 480
E--> 4360  cgcaccgtgg cccgtgtctc gcactcggtg cgggagggga acgcgacgcg catggagggtc
4361 540
E--> 4362  cacttcaccc tggccgaccc gggcaagggc gtgcggcaact tctccgacgt ccatttcatc
4363 600
E--> 4364  accctgttcc accaggccga gtacgaggcc gcgttacagg ccgcgggct gcgcgtcgag
4365 660
E--> 4366  tacctggagg gcggcccgta gggccgtggc ctttcgctg gcgtccccgc ctga
4367 714
4406 <210> SEQ ID NO: 19
4407 <211> LENGTH: 1281
4408 <212> TYPE: DNA
4409 <213> ORGANISM: Streptomyces venezuelae
4411 <400> SEQUENCE: 19
E--> 4412  atgcgcgtcc tgctgacctc gttcgacat cacacgcact actacggcct ggtgcccctg
4413 60
E--> 4414  gcctggcgcc tgctcgccgc cgggcacgag gtgcgggtcg ccagccagcc cgcgctcact
4415 120
E--> 4416  gacaccatca cccgggtccgg gtcgcgcgcg gtgcgggtcg gcacccgacca cctcatccac
4417 180
E--> 4418  gagtaccggg tgcggtatggc gggcgagccg cggccgaacc atccggcgat cgccttcgac
4419 240
E--> 4420  gaggccccgtc ccgagccgct ggactggac cacgcctcg gcacgcggc gatcctcgcc
4421 300
E--> 4422  ccgtacttcc atctgctcgcaacaacgac tcgatggtgc acgacactcgat cgacttcgccc
4423 360
E--> 4424  cggtcctggc agccggaccc ggtgctgtgg gagccgacga cctacgcggg cgccgtcgcc
4425 420

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:28

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

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E--> 4426 gcccaggtca ccgggtgccgc gcacgccccgg gtcctgtggg ggcccgacgt gatggggcagc
4427 480
E--> 4428 gcccggccca agttcgtcgc gctgcgggac cggcagccgc cccgagcaccc cgaggacccc
4429 540
E--> 4430 accgcggagt ggctgacgtg gacgctcgac cggtaacggcg cctccttcga agaggagctg
4431 600
E--> 4432 ctcaccggcc agttcacat cgacccgacc cccggcagacc tgccctcga cacgggcctg
4433 660
E--> 4434 cccgaccgtcg ggatgcgtta tggccgtac aacggcacgt cggtcgtgcc ggactggctg
4435 720
E--> 4436 agtgagccgc cccgcgggccc cccgggtctgc ctgaccctcg gcttctccgc gcgtgagggtc
4437 780
E--> 4438 ctcggcggcg acggcgtctc gcagggcgac atcctggagg cgctcgccga cctcgacatc
4439 840
E--> 4440 gagctcgtcg ccacgctcga cgcgagtcag cccggccgaga tccgcaacta cccgaagcac
4441 900
E--> 4442 accccgttca cggacttcgt gccgatgcac gcgctcctgc cgagctgctc ggcatcgatc
4443 960
E--> 4444 caccacggcg gggcgccac ctacgcgacc gccgtgatca acggcgtgcc gcaggtcatg
4445 1020
E--> 4446 ctcgccgagc tggggacgc gccggtaag ggcggggccg tcggcagca gggggcggggg
4447 1080
E--> 4448 ttcttcctgc cgccggccga gctcacgccc caggccgtgc gggacgcccgt cgtccgcata
4449 1140
E--> 4450 ctcgacgacc cctcggtcgc caccggcccg caccggctgc gcgaggagac cttcggcgac
4451 1200
E--> 4452 cccaccccg ccgggatcgt ccccgagctg gagcggctcg cccgcagca cccggcccg
4453 1260
E--> 4454 cccggccgacg cccggcactg a
4455 1281
4518 <210> SEQ ID NO: 21
4519 <211> LENGTH: 1209
4520 <212> TYPE: DNA
4521 <213> ORGANISM: Streptomyces venezuelae
4523 <400> SEQUENCE: 21
E--> 4524 gtgaccgacg acctgacggg ggccctcactg cagccccccgc tggggccgac cgtccgcgcg
4525 60
E--> 4526 gtggccgacc gtgaactcg caccacactc ctggagaccc gccgcattca ctggatccac
4527 120
E--> 4528 gcccgcgaacg gcgacccgtta cggccaccgtg ctgcgcggcc aggcggacga cccgtatccc
4529 180
E--> 4530 gcgtagcggc gggtagcgtgc cccggccgcg ctctccttca gcccacggg cagctgggtc
4531 240
E--> 4532 accggccgatc acggccctggc ggcgagcatc ctctgctcga cggacttcgg ggtctccggc
4533 300
E--> 4534 gcccgcacggcg tcccggtgcc gcagcagggtc ctctcgtacg gggaggggctg tccgctggag
4535 360
E--> 4536 cccgcacggcagg tgctgcccggc ggccgggtgac gtgcgggagg gcgggcagcg tgccgtggtc
4537 420

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
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Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

E--> 4538 gaggggatcc accgggagac gctggagggt ctcgcgcgg acccgtcggc gtcgtacgcc
 4539 480
 E--> 4540 ttcgagctgc tggcggttt cgtccgccc gcggtgacgg ccgctgccgc cgccgtgctg
 4541 540
 E--> 4542 ggtgttccc gggaccggcg cgccgacttc gcgatctgc tggagcggct ccggccgctg
 4543 600
 E--> 4544 tccgacagcc tgctggcccc gcagtccctg cgacgggtac gggcggcgga cggcgccgtg
 4545 660
 E--> 4546 gccgagctca cggcgctgct cgccgattcg gacgactccc ccggggccct gctgtcgccg
 4547 720
 E--> 4548 ctcgggtca cccgagccgt ccagtcacc gggAACGCGG tgctcgccgt cctcgccat
 4549 780
 E--> 4550 cccgagcagt ggccggagct gtgcgaccgg cccgggctcg cggcgccgc ggtggaggag
 4551 840
 E--> 4552 accctccgt acgacccggc ggtcagctc gacgcccggg tggccgcgg ggagacggag
 4553 900
 E--> 4554 ctggcgggcc ggccggctgcc ggccggggcg catgtcgctg tcctgaccgc cgcgaccggc
 4555 960
 E--> 4556 cgggacccgg aggtcttac ggacccggag cgcttcgacc tcgcgcgcgg cgacgcccggc
 4557 1020
 E--> 4558 ggcacacctcg cgctgcaccc cggccgtccg tacggccgg tggcgtccct ggtccggctt
 4559 1080
 E--> 4560 caggcggagg tcgcgctgcg gaccctggcc gggcgttcc cgggctgcg gcaggcgggg
 4561 1140
 E--> 4562 gacgtgctcc gccccggccg cgcgcctgtc ggccgcgggc cgctgagcgt cccggtcagc
 4563 1200
 E--> 4564 agctcctga
 4565 1209
 4626 <210> SEQ ID NO: 23
 4627 <211> LENGTH: 2430
 4628 <212> TYPE: DNA
 4629 <213> ORGANISM: Streptomyces venezuelae
 4631 <400> SEQUENCE: 23
 E--> 4632 gtgacaggta agacccgaat accgcgtgtc cgccgcggcc gcaccacgcc cagggccttc
 4633 60
 E--> 4634 accctggccg tcgtcgac cctgctggcg ggcaccaccc tggccgcgc cgcgtccggc
 4635 120
 E--> 4636 gcccggaca cggccaatgt tcagtagacag agccggggcg cggagctcg cgcggatcg
 4637 180
 E--> 4638 acgctcgacg agaagatcag cttcgccac tggcgctgg accccgaccg gcagaacgtc
 4639 240
 E--> 4640 ggctaccttc cggcggtgcc cggtctggc atcccgagc tgcgtgcgc cgacggccgg
 4641 300
 E--> 4642 aacggcatcc gcctggtggg gcagaccgcc accgcgtgc cgcgcgggt cgccctggcc
 4643 360
 E--> 4644 agcacacctcg acgacaccat ggccgacagc tacggcaagg tcatggcccg cgacggtcgc
 4645 420
 E--> 4646 gcgctcaacc aggacatggt cctggcccg atgatgaaca acatccgggt gccgcacggc
 4647 480

RAW SEQUENCE LISTING DATE: 11/26/2001
 PATENT APPLICATION: US/09/988,384 TIME: 15:23:28

Input Set : A:\Sequence Listing.txt
 Output Set: N:\CRF3\11212001\I988384.raw

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E--> 4648 ggccggaact acgagaccctt cagcgaggac cccctggtct cctcgcgac cgcggtcgcc
4649 540
E--> 4650 cagatcaagg gcatccaggg tgcgggtctg atgaccacgg ccaagcactt cgcggccaac
4651 600
E--> 4652 aaccaggaga acaaccgctt ctccgtgaac gccaatgtcg acgagcagac gctccgcgag
4653 660
E--> 4654 atcgagttcc cggcggttca ggcgtcctcc aaggccggcg cggcctcctt catgtgtgcc
4655 720
E--> 4656 tacaacggcc tcaacggaa gccgtcctgc ggcaacgacg agtcctcaa caacgtgctg
4657 780
E--> 4658 cgcacgcagt ggggcttcca gggctgggtg atgtccgact ggctcgccac cccgggaccc
4659 840
E--> 4660 gacgccccatca ccaagggcct cgaccaggag atgggcgtcg agctccccgg cgacgtcccc
4661 900
E--> 4662 aaggcgagc cctcgccgccc ggccaagttc ttccggcgagg cgctgaagac ggccgtcctg
4663 960
E--> 4664 aacggcacgg tccccgagggc ggccgtgacg cggtcggcg agcggatcgt cggccagatg
4665 1020
E--> 4666 gagaagttcg gtctgctctt cgccactccg ggcgcgcggc ccgagcgcga caaggcggtt
4667 1080
E--> 4668 gcccaggcggttgtccca ggtcgcccgag aacggcgccgg tgctcctgcg caacgagggc
4669 1140
E--> 4670 caggccctgc cgctcgccgg tgacgcccggc aagagcatcg cggcatcgcc cccgacggcc
4671 1200
E--> 4672 gtcgacccca aggtcaccgg cctggcgacg gcccacgtcg tccggactc ggcggcgccgg
4673 1260
E--> 4674 ccactcgaca ccatcaaggc ccgcgcgggt gcgggtgcga cggtgacgta cgagacgggt
4675 1320
E--> 4676 gaggagacct tcgggacgca gatcccgccgg gggAACCTCA gcccggcggtt caaccaggc
4677 1380
E--> 4678 caccagctcg agccgggcaaa ggcggggcgctgtacgacg gcacgctgac cgtccccggcc
4679 1440
E--> 4680 gacggcgagt accgcattcg ggtccgtgcc accgggtggtt acggccacggt gcagctcgcc
4681 1500
E--> 4682 agccacacca tcgaggccgg tcaggtctac ggcaagggtga gcagcccgct cctcaagctg
4683 1560
E--> 4684 accaaggcgca cgcacaagct cacgatctcg ggcttcgcga tgagtgcac cccgctctcc
4685 1620
E--> 4686 ctggagctgg gctgggtgac gcccggcgcc gcccacgcga cgatcgcaaa ggccgtggag
4687 1680
E--> 4688 tcggcgccggaa aggccccgtac ggcgggtcgcc ttccgcctacg acgacggcac cgagggcgcc
4689 1740
E--> 4690 gaccgtccga acctgtcgct gcccgggtacg caggacaagc tgatctcgcc tgtcgcccggac
4691 1800
E--> 4692 gccaacccga acacgatcggtt ggtccctcaac accgggttcgt cggtgctgat gccgtggctg
4693 1860
E--> 4694 tccaaagaccc gcccgggtcct ggacatgtgg taccggggcc aggcggcgcc cgaggccacc
4695 1920
E--> 4696 gccgcgtgc tctacgggtga cgtcaaccccg agcggcaagc tcacgcagag cttccggcc

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

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Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

4697 1980
E--> 4698 gcccagaacc agcacgcggt cgccggcgac ccgacaagct acccgggcgt cgacaaccag
4699 2040
E--> 4700 cagaegtacc gcgaggggcat ccacgtcggt taccgctggt tcgacaagga gaacgtcaag
4701 2100
E--> 4702 ccgcgtttcc cggtcgggca cggcctgtcg tacacctcgt tcacgcagag cgccccgacc
4703 2160
E--> 4704 gtcgtgcgta cgtccacggg tggctctgaag gtcacggtca cggtccgcaa cagcgggaag
4705 2220
E--> 4706 cgcgcggcc aggaggtcgt ccaggcgtac ctcggtgcca gcccgAACGT gacggctccg
4707 2280
E--> 4708 caggcgaaga agaagctcgt gggctacacg aaggctctcg tcgcccggg cgaggcgaag
4709 2340
E--> 4710 acgggtacgg tgaacgtcga ccgcgtcag ctgcagaccg gttcgtcctc cgccgacctg
4711 2400
E--> 4712 cggggcagcg ccacggtcaa cgtctggta
4713 2430
4840 <210> SEQ ID NO: 26
4841 <211> LENGTH: 1011
4842 <212> TYPE: DNA
4843 <213> ORGANISM: Streptomyces venezuelae
4845 <400> SEQUENCE: 26
E--> 4846 atggcaatgc gcgactccat accgaggcga gcggaccgcg acaccctcg ccgcgaatta
4847 60
E--> 4848 ggccagaact tccttcagga cgacagagcc gtgcgcaatc tcgtcacgca tgtcgagggg
4849 120
E--> 4850 gacggtagga acgttctcga aatcgcccc ggaaaggcg cgataaccga ggagttggtg
4851 180
E--> 4852 cgctccttcg acaccgtgac ggtcgtggag atggaccgc actggccgc gcatgtgcgg
4853 240
E--> 4854 cggaaattcg aaggggagag ggtcaccgta ttccagggtg atttcctcga cttccgcatt
4855 300
E--> 4856 cccgcgata tcgacaccgt cgtcgaaac gttcccttcg gcatcacgac ccagatttc
4857 360
E--> 4858 cggagtctcc tggaatcgac gaactggcag tcggccggcc tgatagtgca gtgggaggc
4859 420
E--> 4860 gcccgcAAAC gcgcggcgtc cagggcggta tcgctccatc cgacccttcg ggccccctgg
4861 480
E--> 4862 tacgagttcg cggccacga ccgcgtccgc gcctcgtcgt tccgtccgtat gccccgcgtc
4863 540
E--> 4864 gacggcggcg tcctgacgt cagggcgcgc ccccagcccc tgctgcccga gagcgcgagc
4865 600
E--> 4866 cgcgccttc agaacttcgc cgaagccgtc ttccaccggcc ccggacgggg cctcgcggag
4867 660
E--> 4868 atccctccggc gccacatccc caagcggacc taccgttccc tcgcccaccg ccacggaaatt
4869 720
E--> 4870 cccgacggcg gactgccgaa ggacccatcgt ctcacccat ggatcgccct tttccaggcc
4871 780
E--> 4872 tcccaGCCGA gttacgcGCCG gggggcggcc ggcacgcgcA tgccgggcca gggcggtggc

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

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Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

4873 840
E--> 4874 gccggcggca gggactatga ctcggagacg agcagggccg ccgtgcccg gagccgcaga
4875 900
E--> 4876 tacggccccca cgcgccggcgg cgaaccctgc gcaccccgcg cacaggcccg gcagacccaag
4877 960
E--> 4878 ggccgccagg gcgcgcgagg ctcgtcgtaa ggacgcccga cggccgtta g
4879 1011
4930 <210> SEQ ID NO: 28
4931 <211> LENGTH: 969
4932 <212> TYPE: DNA
4933 <213> ORGANISM: Streptomyces venezuelae
4935 <400> SEQUENCE: 28
E--> 4936 atggcatttt ccccgccagg cggccgacac gagctcggtc agaacttctt cgtcgaccgg
4937 60
E--> 4938 tcagtgatcg acgagatcga cggcctggtg gccaggacca agggtccgat actggagatc
4939 120
E--> 4940 ggtccgggtg acggcgccct gaccctgccc ctgagcaggc acggcaggcc gatcaccggc
4941 180
E--> 4942 gtcgagctcg acggccggcg cgccgcgcgc ctcggtgcgc gcaccccccgg tcatgtgacc
4943 240
E--> 4944 gtggcgcacc acgacttctt gcagtaccccg ctgcccgcga acccgatgt ggtcgctggc
4945 300
E--> 4946 aacgtccccct tccatctgac gacggcgatc atgcggccgc tgctcgacgc ccagcactgg
4947 360
E--> 4948 cacaccggcg tcctcctcgt ccagtggag gtcgccccggc gcccggccgg cgtcggccgg
4949 420
E--> 4950 tcgacgctgc tgacggccgg ctggcgcccc ttgtacgagt tcgacctgca ctcccgggtc
4951 480
E--> 4952 cccgcgcggg cttccgtcc gatgccgggc gtggacggag gactactggc catccggccgg
4953 540
E--> 4954 cgggtccgcgc cgctcggtgg ccaggtgaag acgtaccagg acttcgtacg ccaggtgttc
4955 600
E--> 4956 accggcaagg ggaacgggct gaaggagatc ctgcggccga cggggcggat ctgcgcgg
4957 660
E--> 4958 gacctggcga cctggctgcg gagaaacgag atctcgccgc acgcgctgcc caaggacctg
4959 720
E--> 4960 aagcccgccggc agtgggcgtc gctgtggag ctgaccggcg gcacggccga cggatccccc
4961 780
E--> 4962 gacggtaacgg cgggcgggtgg cgccgcggga tcgcacgggg cggctcggtt cggggccgg
4963 840
E--> 4964 cacccggggcg gcccgggtgc cgccgcggcgg cggggcgtgc cgcaggccgc ggcggccgg
4965 900
E--> 4966 gggcatgcgg tacggagctc cacggggacc gagccgaggt ggggcagggg gcccggcgg
4967 960
E--> 4968 agcgcgtga
4969 969
6517 <210> SEQ ID NO: 34
6518 <211> LENGTH: 4689
6519 <212> TYPE: DNA

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
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Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

6520 <213> ORGANISM: Streptomyces venezuelae
 6522 <400> SEQUENCE: 34
 E--> 6523 atggcgaaca acgaagacaa gctccgcgac tacctaaggc gcgtcaccgc cgagctgcag
 6524 60
 E--> 6525 cagaacacca ggcgtctcg cgagatcgag ggacgcacgc acgagccgtt ggcgatcg
 6526 120
 E--> 6527 ggcatggcct gccgcctgcc gggcggtgtc gcctcgcccc aggacctgtg gcagctgg
 6528 180
 E--> 6529 gccggggacg gggacgcgat ctcggagttc ccgcaggacc gcggctggga cgtggagg
 6530 240
 E--> 6531 ctgtacgacc ccgacccgga cgcgtccggc aggacgtact gccggtccgg cggattcctg
 6532 300
 E--> 6533 cacgacgccc gcgagttcga cgcgcacttc ttcggatct cgcgcgcga gcccctcgcc
 6534 360
 E--> 6535 atggacccgc agcagcgact gtccctcacc accgcgtggg aggcgatcga gagcgcgg
 6536 420
 E--> 6537 atcgacccga cggccctgaa gggcagcggc ctcggcgatc tcgtcggcggtt ctggcacacc
 6538 480
 E--> 6539 ggctacacct cggggcagac caccgcgtg cagtcgcggc agctggagg ccacccgg
 6540 540
 E--> 6541 agcggcgcgg cgctggcgtt cctgtccggc cgtatcggt acgtcctcg tacggacgg
 6542 600
 E--> 6543 cccgcctga ccgtggacac ggcctgctcg tcctcgctgg tcggccctgca cctcgccgt
 6544 660
 E--> 6545 caggccctcc gcaaggcgaa gtgcgacatg gcctcgccc gtgggtcac ggtcatgccc
 6546 720
 E--> 6547 aacgcggacc tggtcggtca gttcagccgg cagcgcggc tggccgcgg cggccgg
 6548 780
 E--> 6549 aaggcggtcg ccacccgtgc ggacggcttc ggcccccggc agggcgccgg agtccctg
 6550 840
 E--> 6551 gtggagcgcc tgcggacgc cgcgcacac ggacacccga tcctcgccgt cgtccgcgg
 6552 900
 E--> 6553 agcgcgggtca accaggacgg cgcgcacac ggccctcacgg ctccgcacgg gcctcc
 6554 960
 E--> 6555 cagcgcgtca tccgcacggc cctggcgac gcccggctcg cgccgggtga cgtggac
 6556 1020
 E--> 6557 gtcgaggcgac acggcacggg cacgcggctc ggcgacccga tcgaggcgca gc
 6558 1080
 E--> 6559 gccacccatcg gccaggagaa gagcagcgaa cagccgctga ggctggcgcc gtt
 6560 1140
 E--> 6561 aacatcgccgc acacgcaggc cgcgcgggt gtcgcagggt tcacatcgat g
 6562 1200
 E--> 6563 atgcgcacacg gactgctgcc gaagacgctg cacgtcgacg agccctcgga
 6564 1260
 E--> 6565 tggtcggcggtt gcacgggttactcctcacc gaggccgtcg actggccggaa
 6566 1320
 E--> 6567 ggcgggctgc cccgcgcggc tgcggatca gcgggacgaa cgcgcacgt
 6568 1380
 E--> 6569 gtcctggagg agggcccgcc ggtcgaggac tcccccggcc tcgagccgccc
 ggccgggtggc

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:29

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

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6570 1440
E--> 6571 ggtgtggtgc cgtggccggt gtccgcgaag actccggccg cgctggacgc ccagatcggg
6572 1500
E--> 6573 cagctcgccg cgtacgcgga cggtcgtacg gacgtggatc cggcggtggc cgcccgcgcc
6574 1560
E--> 6575 ctggtcgaca gccgtacggc gatggagcac cgcgcggtcg cggtcggcga cagccgggag
6576 1620
E--> 6577 gcactgcggg acgcctgcg gatgccggaa ggactggta cgcgcacgtc ctcggacgtg
6578 1680
E--> 6579 ggccgggtgg cgttcgtctt ccccgccag ggcacgcagt gggccggcat gggcgccgaa
6580 1740
E--> 6581 ctccttgaca gtcaccgga gttcgtgcc tcgatggcc aatgcgagac cgcgcctc
6582 1800
E--> 6583 cgctacgtcg actggctct tgaagccgtc gtccgacagg aaccggcgc acccacgtc
6584 1860
E--> 6585 gaccgcgtcg acgtcgtcca gcccgtgacc ttgcgtgtca tggctcgct ggcgaaggtc
6586 1920
E--> 6587 tggcagcacc acggcatcac cccccaggcc gtcgtggcc actcgcaggg cgagatcgcc
6588 1980
E--> 6589 gccgcgtacg tcgcccgtgc actcaccctc gacgacgccc cccgcgtcgt caccctgcgc
6590 2040
E--> 6591 agcaagtcca tcgcccggca cctcgccggc aaggggcgca tgatctccct cgcgcgtc
6592 2100
E--> 6593 gagggcgccg tcctgaagcg actgagcgac ttgcacggac tctccgtcgc cgcgtcaac
6594 2160
E--> 6595 ggcacccaccc caacctgtgt ctccggcgtc cgcacccaga tcgaggaact cgcgcgtc
6596 2220
E--> 6597 tgcgaggccg acggcgtccg tgcgcggatc atcccggtcg actacgcctc ccacagccgg
6598 2280
E--> 6599 caggtcgaga tcatcgagaa ggagctggcc gaggtcctcg ccggactcgc cccgcaggct
6600 2340
E--> 6601 cgcacgtgc cggttttctc caccctcgaa ggcacctgga tcaccgagcc ggtgctcgac
6602 2400
E--> 6603 ggcaccaact ggtaccgcaa cctgcgcct cgcgtgggt tcgcggccgc cgtggagacc
6604 2460
E--> 6605 ttggcggttg acggcttcac ccacttcatac gaggtcagcg cccacccgt cctcaccatg
6606 2520
E--> 6607 accctccccg agaccgtcac cggcctcgcc accctccgccc gcgaacaggg aggccaggag
6608 2580
E--> 6609 cgtctggtca cctcaactcgc cgaaggctgg gccaacggcc tcaccatcga ctggcgccc
6610 2640
E--> 6611 atcctccca cgcacccgg ccaccaccc gagctccca cctacgcctt ccagaccgag
6612 2700
E--> 6613 cgcttctggc tgcagagctc cgcgcacc accgcgcggc acgactggcg ttaccgcgtc
6614 2760
E--> 6615 gagtggaaagc cgctgacggc ctccggccag gcgacgtgt ccggcggtg gatcgatcgcc
6616 2820
E--> 6617 gtcggggagcg agccagaagc cgagctgctg ggcgcgtga aggccgcggg agcggaggtc
6618 2880

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:29

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

```

E--> 6619 gacgtactgg aagccggggc ggacgacgac cgtgaggccc tcgccgccc gctcaccgca
6620 2940
E--> 6621 ctgacgaccg gcgacggctt caccggcgtg gtctcgctcc tcgacgacct cgtgccacag
6622 3000
E--> 6623 gtcgcctggg tgcaggcact cggcgacgcc ggaatcaagg cgcccctgtg gtccgtcacc
6624 3060
E--> 6625 cagggcgccg tctccgtcgg acgtctcgac accccccccg acccccggccg ggccatgctc
6626 3120
E--> 6627 tggggcctcg gccgcgtcgt cgcccttgag caccccgaaac gctggccgg cctcgtcgcac
6628 3180
E--> 6629 ctccccggcc agccccatgc cgccgcctc gcccacctcg tcacccgact ctccggcgcc
6630 3240
E--> 6631 accggcgagg accagatcgc catccgcacc accggactcc acgccccggccg cctcgccccgc
6632 3300
E--> 6633 gcacccctcc acggacgtcg gcccacccgc gactggcagc cccacggcac cgtcctcata
6634 3360
E--> 6635 accggcgccca ccggagccct cggcagccac gccgcacgct ggtggccca ccacggagcc
6636 3420
E--> 6637 gaacacctcc tcctcgtag ccgcagcggc gaacaagccc cggagccac ccaactcacc
6638 3480
E--> 6639 gccgaactca ccgcacatggg cgcccgctc accatcgccg cctgcgacgt cgccgacccc
6640 3540
E--> 6641 cacccatgc gcacccctct cgacgcccatt cccggcgaga cgccctcac cgccgtcgctc
6642 3600
E--> 6643 cacaccggccg ggcacccggg cggcgtccg ctggacgtca cggccccggga ggacatcgcc
6644 3660
E--> 6645 cgcacatcgg ggcgcaagac gagcggcgcc gaggtcctcg acgacctgct cggcgccact
6646 3720
E--> 6647 cgcgtggacg cttcgtagt ctactcctcg aacgcggggg tctggggcag cggcagccag
6648 3780
E--> 6649 ggcgtctacg cggcgccaa cgcccacctc gacgcgtcg cgcccccggcc cgcgcggccgg
6650 3840
E--> 6651 ggcgagacgg cgacccgtcg cgcctggggc ctctggggc ggcacggcat gggccggggc
6652 3900
E--> 6653 gccgacgacg cgtactggca gcgtcgccgc atccgtccga tgagccccga cgcgcctcg
6654 3960
E--> 6655 gacgaactgg ccaaggccct gagccacgac gagaccttcg tcgcgtggc cgatgtcgac
6656 4020
E--> 6657 tgggagcggt tcgcgcccgc gttcacggtg tcccgatcca gccttctgct cgacggcgctc
6658 4080
E--> 6659 cccggggccc ggcaggcgct cgccgcaccc gtcgggtggcc cggctccgg cgacggccccc
6660 4140
E--> 6661 gtggcgccga cggggcagtc gtcggcgctg gccgcgtatca cgcgcgtccc cgagccccgag
6662 4200
E--> 6663 cgccggccgg cgctcctcac ctcgtccgt acccacgccc cggccgtact cggccattcc
6664 4260
E--> 6665 tcccccgacc ggggtggccccc cggccgtgcc ttcaccgagc tcggcttcga ctcgtgacg
6666 4320
E--> 6667 gccgtgcagc tccgcacca gctctccacg gtggtcggca acaggctccc cgccaccacg

```

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
 TIME: 15:23:29

Input Set : A:\Sequence Listing.txt
 Output Set: N:\CRF3\11212001\I988384.raw

```

6668 4380
E--> 6669  gtcttcgacc acccgacgcc cgccgcactc gccgcgcacc tccacgaggc gtacctcgca
6670 4440
E--> 6671  ccggccgagc cggccccgac ggactggag gggcggtgc gccggccct ggccgaactg
6672 4500
E--> 6673  cccctcgacc ggctgcggga cgcgggggtc ctgcacaccg tcctgcgcct caccggcatc
6674 4560
E--> 6675  gagcccagc cgggttccgg cggttcggac ggcggcggc ccgaccctgg tgcggagccg
6676 4620
E--> 6677  gaggcgtcga tcgacgacct ggacgcccag gccctgatcc ggatggctct cggcccccgt
6678 4680
E--> 6679  aacacctgta
6680 4689
6885 <210> SEQ ID NO: 36
6886 <211> LENGTH: 4041
6887 <212> TYPE: DNA
6888 <213> ORGANISM: Streptomyces venezuelae
6890 <400> SEQUENCE: 36
E--> 6891  atgacgagtt ccaacgaaca gtttgtggac gctctgcgcg cctctctcaa ggagaacgaa
6892 60
E--> 6893  gaactccgga aagagagccg tcgcccccc gaccgtcggc aggagccat ggcatcgtc
6894 120
E--> 6895  ggcatgagct gccgggttcgc gggcgaatc cggccccccg aggacctctg ggacgcccgtc
6896 180
E--> 6897  gccgcgggca aggacctggt ctccgaggta ccggaggagc gcggctggga catcgactcc
6898 240
E--> 6899  ctctacgacc cggtgcccg ggcacgggc acgacgtacg tccgcaacgc cgcgttccctc
6900 300
E--> 6901  gacgacgccc cgggattcga cgcggccttc ttccggatct cgcgcgcga ggccctcgcc
6902 360
E--> 6903  atggacccgc agcagcggca gtcctcgaa gcctcctggg aggtcttcga gcgggcccggc
6904 420
E--> 6905  atcgaccccg cgtcggtccg cggcaccgac gtcggcgtgt acgtggctg tggctaccag
6906 480
E--> 6907  gactacgcgc cggacatccg ggtcgccccc gaaggcaccc gcggttacgt cgtcaccggc
6908 540
E--> 6909  aactcctccg ccgtggccctc cggcgcatac gcgtactccc tcggcctgga gggacccggc
6910 600
E--> 6911  gtgaccgtgg acacggcgtg ctcccttcg ctcgtcgccc tgcacctcgc cctgaagggc
6912 660
E--> 6913  ctgcggaacg gcgactgctc gacggcactc gtggcggcgtg tggccgtct cgcgacgccc
6914 720
E--> 6915  ggcgcgttca tcgagtttag cagccagcag gccatggccg ccgacggccg gaccaagggc
6916 780
E--> 6917  ttccgcctcg cggcggacgg ctcgcctgg ggcgagggcg tcgcccgtact ctcctcgaa
6918 840
E--> 6919  cggctctccg acgcgcggcg caaggccac cgggtcctgg ccgtcgtcgc cggcagcggc
6920 900
E--> 6921  atcaaccagg acggcgcgag caacggcctc acggctccgc acggccctc ccagcagcac

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:29

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

| | |
|-----------|---|
| 6922 | 960 |
| E--> 6923 | ctgatccgcc aggcctggc cgacgcgcgg ctcacgtcga gcgacgtgga cgtcgtggag |
| 6924 | 1020 |
| E--> 6925 | ggccacggca cggggacccg tctcgac ccgatcgagg cgccaggcgct gtcgcccacg |
| 6926 | 1080 |
| E--> 6927 | tacgggcagg ggccgcgcgg gggcagccg ctgcggctgg ggacgctgaa gtcgaacatc |
| 6928 | 1140 |
| E--> 6929 | gggcacacgc aggccgcttc gggtgtcgcc ggtgtcatca agatggtgca ggccgtgcgc |
| 6930 | 1200 |
| E--> 6931 | cacggggtgc tgccgaagac cctgcacgtg gacgagccga cggaccaggt cgactggtcg |
| 6932 | 1260 |
| E--> 6933 | gcccgttcgg tcgagctgct caccgaggcc gtggactggc cggagcggcc gggccggctc |
| 6934 | 1320 |
| E--> 6935 | cgcggggcgg gcgtctccgc gttcggcgtg ggccggacga acgcgcacgt cgtcctggag |
| 6936 | 1380 |
| E--> 6937 | gaggccccgg cggtcgagga gtccctgcc gtcgagccgc cggccggtgg cggcgtggtg |
| 6938 | 1440 |
| E--> 6939 | ccgtggccgg tgtccgcgaa gacctcgcc gcactggacg cccagatcgg gcagctcgcc |
| 6940 | 1500 |
| E--> 6941 | gcatacgcgg aagaccgcac ggacgtggat cggccggtgg cggccgcgc cctggtcgac |
| 6942 | 1560 |
| E--> 6943 | agccgtacgg cgatggagca cgcgcggc gcggtcggcg acagccggga ggcactgcgg |
| 6944 | 1620 |
| E--> 6945 | gacgcctgc ggatgccgga aggactggta cggggcacgg tcaccgatcc gggccgggtg |
| 6946 | 1680 |
| E--> 6947 | gcgttcgtct tccccggcca gggcacgcag tggccggca tggccgcga actcctcgac |
| 6948 | 1740 |
| E--> 6949 | agctcacccg aattcgccgc cgccatggcc gaatgcgaga ccgcactctc cccgtacgtc |
| 6950 | 1800 |
| E--> 6951 | gactggtctc tcgaagccgt cgtccgacag gtcggcggcg caccgacact cgaccgcgtc |
| 6952 | 1860 |
| E--> 6953 | gacgtcgtcc agccgtcac ttgcggcgtc atggctccc tgcggcaaggt ctggcagcac |
| 6954 | 1920 |
| E--> 6955 | cacggcatca ccccgaggc cgtcatggc cactcccagg gcggatcgc cggccgtac |
| 6956 | 1980 |
| E--> 6957 | gtgcgggtg ccctcacccct cgacgacgcc gtcgtgtcg tgaccctccg cagcaagtcc |
| 6958 | 2040 |
| E--> 6959 | atgcggccc acctcgccgg caagggcggc atgatctccc tcgcctcag cgaggaagcc |
| 6960 | 2100 |
| E--> 6961 | acccggcagc gcatcgagaa cctccacggc ctgtcgatcg ccgcgtcaa cggccctacc |
| 6962 | 2160 |
| E--> 6963 | gccaccgtgg ttccggcga ccccacccag atccaagaac ttgctcaggc gtgtgaggcc |
| 6964 | 2220 |
| E--> 6965 | gacggcatcc ggcacggat catccccgtc gactacgcct cccacagcgc ccacgtcggag |
| 6966 | 2280 |
| E--> 6967 | accatcgaga acgaactcgc cgacgtcctg gcggggttgt ccccccagac accccaggtc |
| 6968 | 2340 |
| E--> 6969 | cccttcttct ccaccctcga aggacacctgg atcaccgaac ccgcctcga cggccgtac |
| 6970 | 2400 |

RAW SEQUENCE LISTING DATE: 11/26/2001
 PATENT APPLICATION: US/09/988, 384 TIME: 15:23:29

Input Set : A:\Sequence Listing.txt
 Output Set: N:\CRF3\11212001\I988384.raw

E--> 6971 tggtaaccgca acctccgcca tcgtgtggc ttgcggccgg ccgtcgagac cctcgccacc
 6972 2460
 E--> 6973 gacgaaggct tcacccactt catcgaggtc agcgcccacc ccgtcctcac catgaccctc
 6974 2520
 E--> 6975 cccgacaagg tcaccggcct ggccaccctc cgacgcgagg acggcggaca gcaccgcctc
 6976 2580
 E--> 6977 accacctccc ttgcccgaggc ctggccaac ggctcgccc tcgactggc ctccctctg
 6978 2640
 E--> 6979 cccgccccgg gcgcaccttag cccgcgcgtc cccgacctcc cgacgtacgc cttccagcac
 6980 2700
 E--> 6981 cgctcgtaact ggatcagccc cgcggtccc ggcgaggcgc cccgcgcacac cgcttccggg
 6982 2760
 E--> 6983 cgcgaggccg tcgcccggac ggggctcgcg tggggcccggt gtgccgagga cctcgacgag
 6984 2820
 E--> 6985 gagggccggc gcagcgccgt actcgcatg gtatgcggc aggccgcctc cgtgctccgg
 6986 2880
 E--> 6987 tgcgactcgcc cccgcgtc acgcgtcgac cccgcgtcg gggagatcggtt cttcgactcg
 6988 2940
 E--> 6989 ctgaccgcggc tcgacttccg caaccgcgtc aaccggctga ccggcttcca gctgccgccc
 6990 3000
 E--> 6991 accgtcggtgt tccagcaccc gacgcccgtc gcgcgtcgccg agcgcacatcg cgcgcgactg
 6992 3060
 E--> 6993 gcccggcggaa actggggccgt cggcgccgtc tcggatcacg agcaggcggaa ggaggagaag
 6994 3120
 E--> 6995 gcccggcgtc cggcgccggc ccgcgtccggg gccgacacccg gcgcggcgc cggatgttc
 6996 3180
 E--> 6997 cgcgcctgt tccggcaggc cgtggaggac gaccggatcg gcgagttcct cgacgtcctc
 6998 3240
 E--> 6999 gccgaaggct cccgcgttc cccgcgttc gcctcgcccg aggctgtc ggagcggcgtc
 7000 3300
 E--> 7001 gaccgggtgc tgctcgccgg cggtccgacg gaccggggcgg aaggccgtgc cgttctcggtc
 7002 3360
 E--> 7003 ggctgcacccg gcaccgcggc gaacggcggc cccgcacgt tcctcggtc cagcaccc
 7004 3420
 E--> 7005 ttccaggagg agcgggactt cctcgccgtc cctctcccg gctacggcac gggtaacgggc
 7006 3480
 E--> 7007 accggcacgg ccctccctccc ggccgatctc gacaccgcgc tcgacgcccgg gggccggcgg
 7008 3540
 E--> 7009 atcctccggg cccgcgggaa cgcggatctc gtcctgtcg ggcactccgg cggcgccctg
 7010 3600
 E--> 7011 ctcgcgcacg agctggcctt cccgcgtggag cggcgacacg gcgcgcgc gggccggatc
 7012 3660
 E--> 7013 gtccctggatcg acccctatcc cccggccat caggagccca tcgaggtgtg gagcaggcag
 7014 3720
 E--> 7015 ctggcgagg gcctgttcgc gggcgagctg gagccgtatgt ccgtatgcgcg gctgctggcc
 7016 3780
 E--> 7017 atggggccgggt acgcgcgggtt cctcgccggc cccggccgg gccgcacac cgcgcctgt
 7018 3840
 E--> 7019 cttctggatcgcc accgcgtggc gactggcagg aggagcgggg cgcactggcgt

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:29

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

```

7020 3900
E--> 7021 gcccactggg accttccgca caccgtcgcg gacgtgccgg gcgaccactt cacgatgatg
7022 3960
E--> 7023 cgggaccacg cgccggccgt cgccgaggcc gtcctctcct ggctcgacgc catcgagggc
7024 4020
E--> 7025 atcgaggggg cgggcaagtg a
7026 4041
7205 <210> SEQ ID NO: 38
7206 <211> LENGTH: 1251
7207 <212> TYPE: DNA
7208 <213> ORGANISM: Streptomyces venezuelae
7210 <400> SEQUENCE: 38
E--> 7211 gtgcgccgt a cccagcagg aacgaccgct tctccccgg tactcgacct cggggccctg
7212 60
E--> 7213 gggcaggatt tcgcggccga tccgtatccg acgtacgcga gactgcgtgc cgagggtccg
7214 120
E--> 7215 gcccaccggg tgcgcacccc cgagggggac gaggtgtggc tggtcgtcgg ctacgaccgg
7216 180
E--> 7217 ggcgcggccgg tcctcgccga tccccgggttc agcaaggact ggcgcactc caccgactccc
7218 240
E--> 7219 ctgaccgagg ccgaggccgc gctcaaccac aacatgctgg agtccgaccc gccgcggcac
7220 300
E--> 7221 acccggtgc gcaagctggt ggcccggtgag ttcaccatgc gccgggtcga gttgctgcgg
7222 360
E--> 7223 ccccggtcc aggagatcgt cgacgggctc gtggacgcca tgctggccgc gcccgacggc
7224 420
E--> 7225 cgccgcgtac tgatggagtc cctggcctgg ccgctgccga tcaccgtgat ctccgaactc
7226 480
E--> 7227 ctcggcgtgc ccgagccgga ccgcgcggcc ttccgcgtct ggaccgacgc ctgcgtcttc
7228 540
E--> 7229 ccggacgatc ccgcccaggc ccagaccgac atggccgaga tgagcggcta tctctccgg
7230 600
E--> 7231 ctcatcgact ccaagcgcgg gcaggacggc gaggacctgc tcagcgcgtc cgtgcggacc
7232 660
E--> 7233 agcgacgagg acggctcccg gctgacccctc gaggagctgc tcggtatggc ccacatcccg
7234 720
E--> 7235 ctcgtcgccgg ggcacgagac cacggtaat ctgatgccaa acggcatgta cgcgcgtctc
7236 780
E--> 7237 tcgcaccccg accagctggc cgcgcgtccgg gcgcgacatga cgctcttggc cggcgcgggtg
7238 840
E--> 7239 gaggagatgt tgcgctacga gggcccggtg gaatccgcga cctaccgtt cccggtcgag
7240 900
E--> 7241 cccgtcgacc tggacggcac ggtcatcccg gccggtgaca cggtcctcgat cgtccctggcc
7242 960
E--> 7243 gacgcccacc gcaccccccga gcgcgtcccg gacccgcacc gcttcgacat cgcgcgggac
7244 1020
E--> 7245 accgcccggcc atctcgccctt cggccacggc atccacttct gcatcggcgc ccccttggcc
7246 1080
E--> 7247 cggttggagg cccggatcgc cgtccgcgc cttctcgaaac gctgcccggc cctcgccctg

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:29

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

7248 1140
E--> 7249 gacgtctccc cggcgaaact cgtgtggtat ccgaaccga tgattgcgg gctcaaggcc
7250 1200
E--> 7251 ctgccccatcc gctggcgccg aggacggag gcggccgcgtt a
7252 1251
7313 <210> SEQ ID NO: 40
7314 <211> LENGTH: 2787
7315 <212> TYPE: DNA
7316 <213> ORGANISM: Streptomyces venezuelae
7318 <400> SEQUENCE: 40
E--> 7319 atgaatctgg tggaaacgcga cggggagata gccccatctca gggccgttct tgacgcattcc
7320 60
E--> 7321 gccgcagggt acgggacgct cttactcgtc tccggaccgg cccgcaggaa gaagacggag
7322 120
E--> 7323 ctgctgcggc cgctccgcg gctggccgcg gagcgggaga ccccccgtctg gtcgggtccgg
7324 180
E--> 7325 ggcgtgcggg gtgaccgcga catccccctg ggcgttctt gccagttact cccgcaggcc
7326 240
E--> 7327 gaacaacacg gtgcccacac ctccgcgtc cgcgaccttc tggacgcgcgc ctgcggccgg
7328 300
E--> 7329 gccggaaacc tcacccccc cggcgcgcg cccgtccgcg tcgacgagac acaccgcctg
7330 360
E--> 7331 cacgactggc tgctctccgt ctccgcgc accccgttcc tcgtcgccgt cgacgacactg
7332 420
E--> 7333 acccacgcgc acaccgcgtc cctgaggttc ctccgtact gcccgcggca ccacgaccag
7334 480
E--> 7335 ggccgcacgc gttcgcat gaccgagcgg gcctcgacgc gcccggata cgggtgttc
7336 540
E--> 7337 cgcgcgcgc tgctccgcgc gcccacactgc cgcacatgt ggctctccgg gttccccccc
7338 600
E--> 7339 agcgggtac gccagttact cgcacactac tacggccccc aggccgcga gcggcggcc
7340 660
E--> 7341 cccgcgttcc acgcgacgc cggcgaaac cccgttcc tcgtcgccgt gaccaggac
7342 720
E--> 7343 cggcaggcc cccacaccac cctcgccgcg cccggccgcg acgagccgt ccacggcgc
7344 780
E--> 7345 gccttcgcgc aggccgttcc cgcactgc caccgcgcg cccggccac actggagacc
7346 840
E--> 7347 gcccgcgttcc tcgcggcgttcc cgaacagtcc gaccgcgttcc tggtgagcgc gtcacggga
7348 900
E--> 7349 acgacgcgcg cccgcgttcc cgcacatc caggagctcg cccgcacgc cccgttcc
7350 960
E--> 7351 gaggacggca ccctggaca gcccgcgttcc cgcgaggccg cccgttccaggaa cctgcggcc
7352 1020
E--> 7353 ggcgacgcgc cccgcgttcc cccgcgcgc gcccgcgttcc tggccggaa cggccgcgc
7354 1080
E--> 7355 gaggacaccgcg tggccgcgc cctgcgttcc ggcggccccc cccgcgttcc ctggccgttgc
7356 1140
E--> 7357 cccgttccgcg aacggggccgc gcaggccgc cccgcgttcc accgactcga cgacgccttc

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:29

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

| | |
|-----------|---|
| 7358 | 1200 |
| E--> 7359 | cggatcctcg agttcgccgt gcggtcgagc accgacaaca cccagctggc ccgcctcgcc |
| 7360 | 1260 |
| E--> 7361 | ccacacctgg tcgcggcctc ctggcgatg aacccgcaca tgacgaccgg ggcgcctcgca |
| 7362 | 1320 |
| E--> 7363 | ctcttcgacc ggctcctgag cggtgaactg cgcgcgcagcc acccggtcat ggccctgatc |
| 7364 | 1380 |
| E--> 7365 | cgctgcctcg tctggtacgg gcggctgccc gaggccgccc acgcgcgtgtc ccggctgcgg |
| 7366 | 1440 |
| E--> 7367 | ccccagctccg acaacgatgc cttggagctg tcgctcaccc ggatgtggct cgccggcgctg |
| 7368 | 1500 |
| E--> 7369 | tgcgcgcgc tcctggagtc cctgcgggcc acgcgcggagc cggagcgggg tcccgcccc |
| 7370 | 1560 |
| E--> 7371 | gtacggctcg cgccgcggac gaccgcgtc caggcccagg ccggcgtctt ccagcggggc |
| 7372 | 1620 |
| E--> 7373 | ccggacacaacg cctcggtcgc gcaggccgaa cagatcctgc agggctgccc gctgtcgag |
| 7374 | 1680 |
| E--> 7375 | gagacgtacg aggccctgga gacggccctc ttggctctcg tccacgcga ccggctcgac |
| 7376 | 1740 |
| E--> 7377 | cggggcgtgt tctggtcgga cgcctgtc gcggaggccg tggagcggcg gtcgctcgcc |
| 7378 | 1800 |
| E--> 7379 | tggggaggcgg tcttcggcgc gaccggccg atgatcgcga tccgctgccc cgacctcccg |
| 7380 | 1860 |
| E--> 7381 | acggcgcggg agcggggccga gctggcgctc tcccacgcgg cgccggagag ctggggcctc |
| 7382 | 1920 |
| E--> 7383 | gcccgtggca tgcccccttc cgcgtgtcgt ctgcgtcgca cggaggccgg cgagtacgaa |
| 7384 | 1980 |
| E--> 7385 | caggcggagc gggtcctgcg gcagccggtg ccggacgcga tggactcgcgac gcccacggc |
| 7386 | 2040 |
| E--> 7387 | atggagtaa tgcacgcgg gggccgtac tggctggca cggccggct gcacgcggcg |
| 7388 | 2100 |
| E--> 7389 | ctggcgagt tcatgtctcg cggggagatc ctggcgagct ggaacctcgaa ccagccctcg |
| 7390 | 2160 |
| E--> 7391 | atcggtccct ggccggaccc cgcgcggag gtgtacctgc ggctggcaaa ccgcacagaag |
| 7392 | 2220 |
| E--> 7393 | gccaggccgc tggccgaggc ccagctcgcc ctggcgccgc ccggcgctc ccgcacccgg |
| 7394 | 2280 |
| E--> 7395 | ggtctcaccc tgcgggtcct ggccggccgc gtggacggcc agcaggccga gcggctgcac |
| 7396 | 2340 |
| E--> 7397 | gccaggccgg tcgacatgtc gcacgacagc ggccggccgc tcgaacacgc ccgcgcgtc |
| 7398 | 2400 |
| E--> 7399 | gccgggatga gccgcacca gcaggcccag gggacaact accggggcag gatgacggcg |
| 7400 | 2460 |
| E--> 7401 | cggctcgccg ggcacatggc gtggcctgc ggccgtacc cgctggccga ggagatcg |
| 7402 | 2520 |
| E--> 7403 | ccggccgcgc gcggccgcgc ggccaaaggcg gtgagcacgg agctggaaact gccggccgc |
| 7404 | 2580 |
| E--> 7405 | ccggacgtcg ccctgtctcg ggaggccgaa cggccgggtgg cggccctggc agcccgagga |
| 7406 | 2640 |

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001
TIME: 15:23:29

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\11212001\I988384.raw

E--> 7407 ttgacgaacc gccagatagc ggcggctc tgcgtcacccg cgagcacggc cgaacagcac
7408 2700
E--> 7409 ctgacgcgcg tctaccgcaa actgaacgtg acccgccgag cagacctccc gatcagcctc
7410 2760
E--> 7411 gcccaggaca agtccgtcac ggcctga
7412 2787
7537 <210> SEQ ID NO: 42
7538 <211> LENGTH: 27
7539 <212> TYPE: DNA
7540 <213> ORGANISM: Streptomyces venezuelae
7542 <400> SEQUENCE: 42
E--> 7543 cccgaattcg ccgcgcgc cat ggccgaa
7544 27
7546 <210> SEQ ID NO: 43
7547 <211> LENGTH: 35
7548 <212> TYPE: DNA
7549 <213> ORGANISM: Streptomyces venezuelae
7551 <400> SEQUENCE: 43
E--> 7552 gtgatgcattc ggctcggcga cggccca gtt ccgct
7553 35
7555 <210> SEQ ID NO: 44
7556 <211> LENGTH: 45
7557 <212> TYPE: DNA
7558 <213> ORGANISM: Streptomyces venezuelae
7560 <400> SEQUENCE: 44
E--> 7561 atgcattcacc accaccacca ctgagggggc gggcaagtga ccgac
7562 45
7564 <210> SEQ ID NO: 45
7565 <211> LENGTH: 33
7566 <212> TYPE: DNA
7567 <213> ORGANISM: Streptomyces venezuelae
7569 <400> SEQUENCE: 45
E--> 7570 gggtagatcg ctgcaccggc gggtcgttagc gga
7571 33
7573 <210> SEQ ID NO: 46
7574 <211> LENGTH: 27
7575 <212> TYPE: DNA
7576 <213> ORGANISM: Streptomyces venezuelae
7578 <400> SEQUENCE: 46
E--> 7579 gaattcatcg agggggcggg caagtga
7580 27

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:30

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application No
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:3557 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:6
M:332 Repeated in SeqNo=6
L:3836 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:7
M:254 Repeated in SeqNo=7
L:3944 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:9
M:254 Repeated in SeqNo=9
L:4070 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:11
M:254 Repeated in SeqNo=11
L:4152 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:13
M:254 Repeated in SeqNo=13
L:4244 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:15
M:254 Repeated in SeqNo=15
L:4344 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:17
M:254 Repeated in SeqNo=17
L:4412 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:19
M:254 Repeated in SeqNo=19
L:4524 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:21
M:254 Repeated in SeqNo=21
L:4632 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:23
M:254 Repeated in SeqNo=23
L:4846 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:26
M:254 Repeated in SeqNo=26
L:4936 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:28
M:254 Repeated in SeqNo=28
L:6523 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:34
M:254 Repeated in SeqNo=34
L:6891 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:36
M:254 Repeated in SeqNo=36
L:7211 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:38
M:254 Repeated in SeqNo=38
L:7319 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:40
M:254 Repeated in SeqNo=40
L:7543 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:27 SEQ:42
L:7552 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:35 SEQ:43
L:7561 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:44
L:7570 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:33 SEQ:45
L:7579 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:27 SEQ:46
L:7588 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:31 SEQ:47
L:7597 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:30 SEQ:48
L:7606 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:31 SEQ:49
L:7615 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:41 SEQ:50
L:7624 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:32 SEQ:51
L:7633 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:52
M:254 Repeated in SeqNo=52